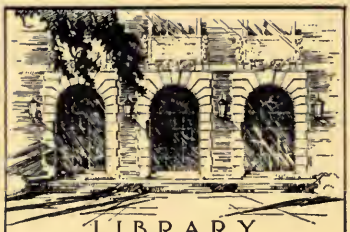

ILLINOIS CORN PERFORMANCE TESTS . . . 1938

University of Illinois · Agricultural Experiment Station

Bulletin 450

In cooperation with the Division of Cereal Crops and Diseases, Bureau of Plant Industry, U. S. Department of Agriculture, and the Illinois State Natural History Survey

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H. C. Gilkerson, Lake county; D. E. Warren, Ogle county; H. K. Danforth, Henry county; G. T. Swaim, Kankakee county; R. T. Nicholas, Schuyler county; H. D. Triplett, Ford county; P. M. Krows, Moultrie county; J. B. Turner, Fayette county; W. D. Murphy, Edwards county; and G. C. Smith, Pope and Hardin counties.

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Illinois Corn Performance Tests 1938

By G. H. Dungan, A. L. Lang, J. H. Bigger, Benjamin Koehler and Oren Bolin[1]

FULLY HALF the 8.4 million acres of Illinois land in corn in 1938 was planted with hybrid seed. In some counties fully 80 to 90 percent of the corn acreage was hybrid.

This bulletin is the fifth annual report of the Illinois Station on the results obtained in performance tests of corn varieties and hybrids in Illinois. As in the previous four years, corn hybrids were submitted to competitive trials in various sections of the state in order to test their adaptation.

The growing conditions of 1938 brought out the adaptational limits of the entries to an extent that none of the four previous seasons had done. This fact emphasizes the importance of conducting yield tests thru a period of years and of using long-term averages as a guide in choosing strains. Results of tests in any single year, taken by themselves, indicate the suitability of entries to that one kind of season and to the kind of soil on which they happen to be grown.

SCOPE OF THE TESTS

In the 1938 corn-performance trials a total of 219 hybrids and 27 open-pollinated varieties were tested in ten fields located in different parts of Illinois. The number of entries per field was limited to sixty in the interest of accuracy of results. Consequently not all entries submitted could be accommodated. On each field five entries were adapted open-pollinated varieties selected to serve as a check. Twenty-one commercial producers entered hybrid seed corn, and twenty-six companies and individuals furnished the open-pollinated varieties.

In order to get representative seed for the tests, the warehouses of the various producers were visited; and where enough seed was available, a sample of each variety or hybrid desired was made up by taking a small quantity from at least 5 different bushel lots. Entries which were obtained from less than 5 bushels of seed are marked in the tables with an asterisk. In most cases the grade sampled was that designated as the "regular flat."

[1]G. H. Dungan, Chief in Crop Production, A. L. Lang, Assistant Chief in Soil Experiment Fields, Illinois Agricultural Experiment Station; J. H. Bigger, Associate Entomologist, Illinois State Natural History Survey; Benjamin Koehler, Chief in Crop Pathology; and Oren Bolin, Associate in Plant Genetics, Illinois Agricultural Experiment Station. The authors are indebted to R. R. Copper, formerly Assistant in Crop Production, for extensive assistance in conducting the field work, tabulating the results, and preparing this report.

SOIL CHARACTERISTICS OF FIELDS

The fields chosen for the 1938 tests were, on the whole, medium high in productivity. In locating a field effort was made to select a soil type that occurs extensively in the region which the field was to represent. Furthermore, care was taken to have each field as nearly uniform as possible both in soil type and in drainage conditions. At Elizabethtown the field extended over a partially eroded slope and included some redeposited sediment along the base of the slope. (See page 272 for map showing location of fields.)

General information on soil characteristics and soil-management practices are indicated in Table 2.[1]

Drainage is described as "rapid," "moderate," and "slow." When applied to the surface, "rapid drainage" indicates a tendency to erode; "moderate" indicates satisfactory runoff with minimum erosion; while "slow" indicates practically no natural surface movement. When applied to underdrainage, "rapid" indicates the existence of a drouthy condition; "moderate" indicates relatively free movement of excess ground water to tile but retention of sufficient moisture for normal plant growth; and "slow" indicates a nearly impervious subsoil.

Table 1.—GENERAL INFORMATION: Illinois Cooperative Corn Performance Tests, 1938

Location of field	County	Cooperator	Number of entries	Date planted	Date harvested	Average yield all entries	
						Total	Sound
NE—Libertyville	Lake	William L. Rapp	45	May 11	Oct. 28	68.0	67.6
N—Kings	Ogle	Elmer Hayes	58	May 16	Nov. 3	87.9	87.0
WNC—Cambridge	Henry	Earl Collis	60	May 12	Nov. 5	89.6	89.0
ENC—Reddick	Kankakee	E. S. Boyer	60	May 13	Oct. 27	65.3	64.3
WC—Littleton	Schuyler	Ira Burnham	60	June 3	Nov. 10	57.9	56.9
EC—Paxton	Ford	Axel Palmberg	60	May 5	Oct. 26	48.9	48.1
SC—Sullivan	Moultrie	Masonic Home Farm	60	May 4	Oct. 7	67.0	66.1
S—Shobonier	Fayette	Art Reichmann	56	May 12	Oct. 11	39.9	39.7
SE—Albion	Edwards	Ernest Schmidt	50	May 17	Oct. 13	81.9	81.0
SS—Elizabethtown	Hardin	Escol Oxford	42	May 3	Oct. 12	55.6	54.2

METHOD OF PLANTING

Each test field was located within a larger cornfield. The test corn was planted by hand on the same day or soon after the rest of the field was planted. The rows were joined with those of the surrounding corn so that the test plots could be cultivated along with the rest of the field.

[1] HERMAN WASCHER, Assistant Chief in the Soil Survey, determined the soil type, uniformity, and physical characteristics of each field. H. J. SNIDER, Assistant Chief in Soil Experiment Fields, made the chemical analyses.

Table 2.—TESTING FIELDS: Soil Characteristics and Management Practices

a—Surface color and drainage b—Subsoil texture, and underdrainage	pH values Surface* Subsoil†	Organic matter	Total nitrogen	Available phosphorus Surface* Subsoil†	Available potassium Surface* Subsoil†	Previous crops and soil management
Northeastern						
Libertyville—Saybrook silt loam		*perct.*	*lbs.*	*lbs.*	*lbs.*	
a—Brown, moderate	5.0*	2.7*	3 610*	5*	193*	Corn 1935, oats 1936
b—Silty clay loam, moderate	6.5†	1.2†	2 100†	4†	180†	Wheat 1937; no treatment, fall-plowed
Northern						
Kingo—Tama silt loam						
a—Light brown, moderately rapid	5.2*	2.4*	2 920*	40*	178*	Corn 1935, oats 1936, soybeans (hay) 1937; manured 1938, limed 1925, spring-plowed
b—Clayey silt loam, moderate	5.4†	1.3†	1 700†	15†	250†	
West north-central						
Cambridge—Muscatine silt loam						
a—Brown, moderate	5.5*	2.6*	3 210*	33*	140*	Oats 1935, sweet clover 1936, corn 1937; limed, spring-plowed
b—Silty clay loam, moderate	5.8†	1.6†	1 820†	6†	140†	
East north-central						
Reddick—Lisbon clay loam						
a—Black, slow	5.9*	5.6*	5 760*	202*	150*	Corn 1935, oats 1936, corn 1937; manured 1937, rock phosphate 1923; spring-plowed
b—Silty clay loam, moderate	7.4†	....	.....	140†	150†	
West-central						
Littleton—Harrison silt loam						
a—Grayish brown, moderate	5.3*	3.2*	3 160*	35*	157*	Wheat 1935, red clover 1936, corn 1937; no treatment, spring-plowed
b—Clay loam, moderately slow	5.8†	2.0†	2 100†	6†	150†	
East-central						
Paxton—Elliot silt loam						
a—Brown, moderate	5.4*	2.3*	2 560*	33*	105*	Corn 1935, corn 1936, oats, sw. cl. 1937; manured 1937, limed 1933, fall-plowed
b—Clay loam, slow	7.0†	1.2†	1 800†	4†	150†	
South-central						
Sullivan[1]—Floyd silt loam						
a—Brown, moderate	5.7*	3.3*	3 700*	12*	155*	Alfalfa 5 years, corn 1936, corn 1937; limed, spring-plowed
b—Silty clay loam, moderate	6.5†	...	.....	15†	166†	
Southern						
Shobonier—Hoyleton silt loam						
a—Gray, moderate	5.3*	1.8*	2 070*	7*	123*	Wheat 1935, sweet clover 1936, wheat, sw. cl. 1937; lime 1935, spring-plowed
b—Clay, very slow	4.5†	1.1†	1 800†	6†	260†	
Southeastern						
Albion—Patton silty clay loam						
a—Brownish gray, slow	6.0*	2.7*	3 640*	187*	147*	Corn 1935, corn 1936, oats 1937; no treatment, spring-plowed
b—Silty clay loam, moderately slow	6.7†	1.8†	2 140†	190†	180†	
Extreme south						
Elizabethtown—Ava silt loam, immature phase						
a—Reddish yellow, moderate to rapid	5.4*	...	2 030*	14*	207*	Corn 1935, red clover 1936 and 1937; no treatment; ½ fall-plowed, ½ spring-plowed
b—Silty clay loam, moderate	...	...	.....	...	...	

*†These symbols are used to remind the reader that the first figure in these columns refers to surface conditions, the second to subsurface conditions.

[1]Soil samples analyzed in 1937.

On all but the Albion field, each entry (variety or hybrid) occupied 10 plots, each plot being 12 hills long and 2 rows wide. At Albion 45 of the 50 entries were planted in 9 plots instead of 10.

All plots were planted 3 kernels to a hill, and the only correction made for stand was for missing hills. All seed was treated with an organic mercury dust before planting.

Entries were arranged in the controlled random order, as described in Bulletin 427 (1936). With the few exceptions indicated in the tables of results, all plots of each entry were harvested.

SEASONAL CONDITIONS

Temperatures during the growing season of 1938 were very favorable for corn. The weather was not extremely hot at any time, and abnormally cool days were very rare. Warm weather continued well into the autumn, the first killing frost occurring on October 24. At this time practically all corn—the seed as well as the commercial crop—was exceptionally dry.

Rainfall was plentiful and reasonably well distributed in 1938. Precipitation was moderately light during the last half of April on all test fields. At Cambridge and Littleton heavy rains the first week of May prevented early planting. Continued wet weather at Littleton prevented planting until early in June. All except the three southern fields received abundant moisture during the middle of May.

Rainfall during the growing season was adequate for good growth of corn. At Libertyville, Kings, and Paxton heavy rains the last week in June supplied more moisture than was needed. No injury resulted, however, except on the Paxton field, where percolation into the subsoil was slow. Except in northern Illinois, rainfall in late August and early September was light, and the dry warm weather hastened the final development and maturity. Continuation of the dry warm weather into October caused the corn to dry out unusually well. Harvesting began early, and much of the corn contained so little moisture it could have been readily shelled and marketed direct from the field.

In northern Illinois rainfall during September was relatively plentiful and well distributed. Consequently the extremely early maturity prevalent in the central and southern sections was not characteristic of corn in that area. However, comparatively dry weather during October resulted in the corn being reasonably dry when harvested.

On July 11 the Sullivan field was struck by a wind and hail storm which riddled the blades badly and broke off a considerable number of plants, especially of those entries which were susceptible to stalk breaking. Later windstorms added to the damage, with the result that the entries in this field were badly stalk-broken. Thus a high general-performance rating could be earned only by entries that endured extreme punishment.

High winds at Littleton in August and September caused much lodging, indicating weak root anchorage. A windstorm the night before the Cambridge field was harvested resulted in severe lodging there.

INSECT PROBLEMS[1]

General Conditions. The Illinois corn crop was relatively free from insect damage during 1938. Because of rains during May and June the early-season threat of chinch bugs did not materialize. Grasshopper depredations were limited to local areas, principally in Macoupin, Christian, Madison, and Montgomery counties. Losses due to cutworms, armyworms, and other pests of that type were slight. Over a wide area grape colaspis was more prevalent than during earlier tests; but the damage caused is not definitely known, and that insect was not observed to affect the corn on the test fields.

Corn rootworms were apparently the only insects which in 1938 deserved consideration as a factor in the relative condition of the test fields. Both the corn rootworm, *Diabrotica longicornis* (Say), and the southern corn rootworm, *Diabrotica duodecimpunctata* (Fab) were present in the state, the former being more abundant at Reddick than at the other fields.

Records of lodging due to rootworm attack were made during September and again at harvest in the north-central, central, and south-central sections of the state. The data on lodging published here (pages 253, 256, and 261) are the records made at harvest. These records, on being correlated[2] with the September records, proved a reliable index of the comparative amount of lodging caused by rootworm injury earlier in the season. Evidently any factor influencing early season lodging tended to influence late-season lodging in the same manner.

Measuring Lodging. The lodging data were taken so as to show: (1) plants leaning 30 degrees or more, as in previous years; and (2) plants leaning more than 45 degrees. The resistance rating takes both points into account. The lodging score was obtained by taking half the percentage of plants leaning 30 degrees or more and adding to that the percentage leaning more than 45 degrees. The scores obtained in this manner tended to lessen the importance of slight leaning and to emphasize the importance of severe leaning. The average lodging score for the field was then obtained; and finally the resistance rating was computed by dividing average lodging score for

[1]Researches on other phases of the insect problem are being conducted cooperatively by the Illinois Station, the U. S. Bureau of Plant Industry, the U. S. Bureau of Entomology and Plant Quarantine, and the Illinois State Natural History Survey.

[2]The coefficient of correlation between the two sets of data was computed for each field. A coefficient of + .330 would have been highly significant under the conditions existing, but the values actually found for the data from the three fields were + .726, + .830, and + .736.

the field by the lodging score for each variety, and multiplying by 100. The resulting figures, expressed as percentages, are shown in Tables 8A, 9A, and 11A, on pages 253, 256, and 261.

The ratings in these tables represent resistance to lodging due primarily to rootworm attack.

Amount of Lodging. Lodging was most severe at Littleton, and was more severe at Reddick than at Sullivan. The severity of lodging at Littleton, where the total amount increased from 54.3 percent on September 21 to 80.6 percent on November 7, was due partly to a rain and wind storm during October. The storm evidently caused lodging of those plants which had been weakened but had not previously lost their hold on the soil.

On the Littleton field only 29 of the entries showed lodging resistance higher than the average of the field. At both Reddick and Sullivan there were 35 such entries. Because of the extreme conditions on the Littleton field the spread between the resistance ratings of the different entries there was smaller than at the other fields.

Thus the 1938 corn performance tests again bring out the fact, emphasized in reports of previous tests, that while many of the hybrids on the market today are outstanding in resistance to rootworm lodging, there are also many that are susceptible. A hybrid's resistance to rootworm attack should always be taken into account in deciding which hybrid to plant.

DISEASE LOSSES

Over the State. Stewart's disease and Diplodia stalk rot caused injury to corn over a wide area in Illinois in 1938. Attack by Stewart's disease reduces a plant's resistance to Diplodia, and thus is responsible for some of the damage credited to Diplodia.

Damage from these two diseases was very severe thruout south-central Illinois. Farm advisers reported up to 50 percent losses in yield in some farm fields, and losses of 40 percent were indicated in some hybrids in the performance tests in this area. In extreme southern Illinois little damage occurred in the performance test. In the eastern part of the northern half of the state, damage was more noticeable than in the western part of this area.

The damage caused directly by Stewart's disease in field corn in 1938 was, on the whole, no greater than what had occurred in 1932 and 1933, and probably not so great. Certainly the damage to sweet corn was not so great as in the two earlier years. In field corn the infection was confined mainly to the leaves because it did not come early enough to attack the stalks. In regular commercial corn, except in restricted areas, only parts of the leaves were blighted.

The bacterium causing Stewart's disease, *Aplanobacter stewarti,* is carried from one season to the next mainly within the bodies of flea

beetles. Large numbers of these insects overwintered in south-central Illinois in 1937-38 because of a mild winter. Fortunately, however, Stewart's disease was scarce in 1937, and very few of these insects carried the infection. Consequently it took some time for the disease to gain momentum in 1938.

The season brought the worst and most widespread occurrence of Diplodia stalk rot ever recorded in Illinois. By far the largest part of the complaints came from farmers growing hybrids. In previous years severe cases of Diplodia stalk rot had often been observed in open-pollinated corn and some hybrids, but never before on such an extensive scale. Beginning in mid-August in many fields in south-central Illinois, whole plants were observed to blanch suddenly as tho frosted. These plants were scattered. Additional plants capitulated from day to day. The shanks broke down at almost the same time, and the bases of the stalks appeared rotted. Two to four weeks later pycnidia of *Diplodia zeae* appeared on nearly all such stalks. By harvest time stalk rot was found thruout the state.

Early-planted and early-maturing corn was usually attacked the worst by the Diplodia organism. This experience is similar to one which farmers in south-central Illinois had with Krug corn some years ago. When Krug corn was taken south of its original home to where the season is longer, trouble from stalk rot followed.

As a result of the Diplodia infection some fields lodged badly, for the rot greatly reduced the breaking resistance of the stalks. Fortunately in most areas no strong winds occurred, and so in most fields the corn stood up satisfactorily in spite of stalk rot.

Losses in the Tests. Extensive losses from Stewart's disease and Diplodia stalk rot, especially from the latter, occurred on five of the ten testing fields reported in this bulletin. About a 40-percent reduction in yield was calculated to have occurred in some hybrids on the Sullivan field. Fully as large a loss probably occurred on the Shobonier field, but as chinch bugs also caused serious damage there, no satisfactory data on disease could be obtained. At Albion the yields of some hybrids were reduced 30 percent by disease; at Reddick and Paxton the losses were considerably less.

Data on disease damage in the various entries, taken September 10 to 24 are reported in Table 3 (page 234). Observation started in the south and proceeded north. Each plot was scored according to the extent of premature dying of the leaves and stalks, and later the replicates were averaged according to the planting and entry keys. Working from plot numbers, the observers had no knowledge of what hybrids were concerned.

No attempt was made to record data for the two diseases separately, for the relative importance of each could not always be determined.

Table 3.—DISEASE DAMAGE: Premature Dying of Corn Plants Caused by Combination of Stewart's Disease and Diplodia Stalk Rot, at Four Locations

(Observed September 10-24, 1938)

Hybrid	Extent of premature dying			
	Reddick ENC	Paxton EC	Sullivan SC	Albion SE
	perct.	perct.	perct.	perct.
Bear OK-30	...	16	37	...
Bear OK-35	...	...	70	...
Bear OK-60	...	16	43	...
Crow 402	48	...	...	...
Crow 602	38	...	...	...
Crow 603	...	24	63	...
Crow 608	...	16	43	...
Crow 640	...	40	...	...
Crow 701W	...	...	40	32
Crow 804	...	12	60	64
DeKalb 606	32	...	...	...
DeKalb 628	48	...	...	82
DeKalb 639	30	...	...	...
DeKalb 701(W)	...	16	...	...
DeKalb 702(W)	8	22	...	...
DeKalb 817	...	...	60	70
DeKalb 821B	36	...	70	68
DeKalb 823	16	...	43	62
DeKalb 825	...	14	30	...
DeKalb 827	...	...	70	68
DeKalb 828	...	...	...	60
DeKalb 830	...	...	...	50
DeKalb 831	...	...	...	64
DeKalb 832	...	...	17	46
DeKalb 870	...	34	73	84
DeKalb 871	...	...	...	82
DeKalb 903(W)	...	18	...	...
DeKalb 907(W)	...	22	...	...
DeKalb 915(W)	...	14	37	36
DeKalb 917(W)	...	...	...	26
DeKalb 918(W)	...	...	20	28
DeKalb 922(W)	6	...	...	32
Funk G32	24	18	...	...
Funk G33	26	22	...	...
Funk G46	...	...	33	...
Funk G49	...	...	60	...
Funk G50	...	...	50	66
Funk G53	...	32	...	...
Funk G55	48	...	...	...
Funk G56	...	...	57	70
Funk G62	...	34	...	...
Funk G65	...	36	...	...
Funk G66	26	...	...	...
Funk G74	56	...	...	...
Funk G85	...	...	57	...
Funk G86	...	...	...	58
Funk G90	...	...	...	60
Funk G92	...	...	73	68
Funk G94	...	18	40	60
Funk G95	...	...	40	68
Funk G125	...	...	23	50
Funk G212	40	36	...	...
Funk G235	...	...	83	...
Funk G244	...	32	83	82
Funk G244T	...	...	70	...
Funk G527W	...	...	...	30
Funk G528W	...	...	...	54
Funk G532W	74	...	...	...
Funk G537W	8	...	...	...
Illini 211	...	18	57	58
Illini 222	...	40	67	...
Illini 233	...	26	57	76
Illini 411	...	...	...	78
Illinois 546	46	...	...	...
Illinois 570	50	...	...	...
Illinois 582	34	...	...	...
Illinois 588	32	22	...	...
Illinois 751	32	...	...	...
Illinois 753	38	30	...	...
Illinois 784	...	...	17	44
Illinois 863	...	...	47	...
Illinois 947	...	...	57	...
Illinois 960	28	32	83	84
Iowealth AQ	74	32	...	...
Iowealth CI	30	18	...	...
Iowealth 15	32	...	...	...
Iowealth 16A	42	...	...	...
Iowealth 22	...	...	80	...
Iowealth 30	...	...	70	72
Iowealth 50	...	...	80	82
Iowealth 52	...	28	...	...
Iowealth 53	...	34	87	84
Moews-Lowe 14	28	...	...	...
Moews-Lowe 20	16	...	...	...
Moews-Lowe 120	...	20	...	...
Moews-Lowe 514	26	...	...	...
Moews-Lowe 523	26	...	...	...
Moews-Lowe 524	...	20	...	...
Moews-Lowe 850	...	...	...	58
Moews 10	54	42	...	...
Moews 12	50	...	...	...
Morgan 52	64	...	...	...
Morgan-Wal. 106	70	...	...	...
National 118	72	...	...	...
National 120	48	...	...	...
National 124	...	56	...	...
National 125E	...	30	...	...
National 130	...	38	73	84
National 131	...	...	87	86
National 132	...	...	63	72
National 117$_3$	54	...	...	...
National 119$_2$	...	...	73	...
Pf.-Stieg. 90	40	26	...	...
Pf.-Stieg. 160	40	20	90	...
Pf.-Stieg. 360	...	...	67	...
Pf.-Stieg. 360A	...	...	77	...
Pf.-Stieg. 365	52	42	83	...
Pf.-Stieg. 375R	...	...	...	64
Pf.-Stieg. 378	...	32	...	...
Pf.-Stieg. 380	28	26	63	...
Pioneer 302	...	28	...	...
Pioneer 304	...	18	...	...
Pioneer 305A	...	36	67	60
Pioneer 307	34	44	60	...
Pioneer 308D	40	...	...	...
Pioneer 312	22	46	80	72
Pioneer 313	16	16	87	76
Pioneer 314	50	...	...	...
Pioneer 317	38	28	80	72
Pioneer 318	58	52	...	...
P.S.M. 370(Mit.)	...	30	...	...
Tiemann 612	36	...	...	...
Tiemann 613	...	36	...	...
Tiemann 800	...	...	77	...
U. S. 5	...	22	...	...
U. S. 13	...	10	...	...
U. S. 35	20	...	63	...
U. S. 44	44	40	...	...
U. S. 61	52	...	...	...
Walter-Pfister 374	44	...	...	...

(Table is concluded on next page)

Table 3.—*Concluded*

Open-pollinated	Extent of premature dying				Open-pollinated	Extent of premature dying			
	Reddick ENC	Paxton EC	Sullivan SC	Albion SE		Reddick ENC	Paxton EC	Sullivan SC	Albion SE
	perct.	*perct.*	*perct.*	*perct.*		*perct.*	*perct.*	*perct.*	*perct.*
Beckerle Y.D.	...	...	...	52	Rice W.D.	...	...	53	...
Bunning W.D.	...	...	27	...	Roeschley Y.D.	46	...	...	...
Canterbury Y.D.	...	...	23	...	Sh. Golden Beauty	...	...	43	...
Doubet Y.D.	20	24	...	...	Sommer Y.D.	...	22	...	...
Hunt W.D.	52	...	...	...	St. Chas. White	...	...	...	28
Leaming	...	...	...	20	Station Y.D.	...	22	...	...
Krug	34	...	...	...	Waddell W.D.	...	...	...	42
McKeighan Y.D.	30	20	...	...	Wilson Y.D.	...	...	43	56
Mountjoy Y.D.	...	26	...	...					

A recheck of the Sullivan field at harvest time showed that those hybrids which had received a high score for disease infection bore Diplodia pycnidia near the base of 95 to 98 percent of the stalks.

Only on the Sullivan field were data on broken stalks obtained. Here the correlation between stalk breaking and disease infection was found to be significant. For data taken on September 12, the correlation coefficient was .65, whereas .50 would have been significant. A correlation of 1.00 is perfect and is perhaps never obtained in biological data.

Yields and Disease Resistance. Severity of disease was significantly correlated with low yield at Sullivan and Albion (Table 4). At Reddick and Paxton the correlation coefficients were too low to show significance. The least damage from disease occurred in the Paxton field.

There were strong indications that disease susceptibility was associated to some extent with potentially high-yielding types. For instance, some hybrids in the tests and on farms contained a large number of plants bearing two ears. Usually it was the two-ear plants that died first from Diplodia infection. One-ear plants of the same hybrids lived longer. Stewart's disease did not appear to discriminate in this respect. The statistical data in Table 4 also show a trend in this direction.

Table 4.—DISEASE CORRELATIONS: Yield, Lateness of Silking, and Moisture in Grain at Harvest, Correlated With Resistance to a Combination of Stewart's Disease and Diplodia Stalk Rot, 1938

Character considered	Correlation with disease complex			
	Reddick	Paxton	Sullivan	Albion
Yield of grain, 1937	−.1309	−.1912	−.3346	−.3635
Yield of grain, 1938	.0354	−.1263	.6560	.5714
Lateness of silking, 1938	.1921	.1576	.5285	.7396
Moisture at harvest, 1937	.5891	.2479	.7328	.9128

Early Maturity and Disease Susceptibility. One fact stands out clearly from the disease ratings shown in Table 3, namely, that where a hybrid was entered in both northern and southern tests, it invariably was diseased much more severely in the southern tests. Obviously such hybrids would be full-season or late types in the central or north-central sections, but would be comparatively early when grown farther south. Illinois hybrid 960, about which there was so much complaint in the south-central area, behaved satisfactorily, for the most part, in the central and north-central parts of the state.

Late Maturity and Disease Resistance. A statistical analysis was made of the relation between late maturity and resistance to the disease complex in which Diplodia stalk rot was the most injurious. Moisture in the grain at harvest is probably the best index of relative maturity, but the moisture data for 1938 could not be used because the disease caused premature dying and thus premature drying of the ears. The moisture data for 1937, a year in which these diseases caused no appreciable injury, were therefore used. Obviously only the hybrids that were entered both years could be used in the analysis. That the correlations were very high is shown in Table 4.

Another less accurate measure of lateness of maturity is lateness of silking. The 1938 silking dates could be used because the diseases did not become serious until after that time. All the entries in the four fields could thus be used in the calculation. A significant correlation between lateness of silking and disease resistance was shown in two of the fields.

Unquestionably some inbreds entering into given hybrids contribute directly to the resistance or susceptibility of the hybrids to the two diseases considered here; but as the vast majority of the entries in these tests were hybrids of secret pedigree, no analysis of this matter could be undertaken. In view of the very high correlation between resistance to these diseases and lateness of maturity, the best general recommendation that can be given for a specific geographical location is to use those hybrids that require the entire growing season to reach maturity. A more specific recommendation is to consider the upper 10 or 20 entries in the field at the nearest latitude, and then compare the disease ratings of those entries in Table 3.

Disease Outlook. Whether Stewart's disease will be a depressing factor in 1939 corn yields depends largely on winter temperatures and can be predicted fairly accurately by next April. Should a mild winter occur, the stage is set for greater losses next year, for most of the flea beetles that went into winter quarters carried the infection.

Diplodia will overwinter without question, and the chances for trouble next year are above average. No satisfactory predictions can be made, however, because the degree of infection will depend considerably on weather conditions during the growing season.

DROPPED EARS

A count was made of the dropped ears on all the testing fields in 1938; but on only two of the fields (Reddick and Littleton) was there an appreciable number of ears on the ground. On these fields the percentage of dropped ears was computed by dividing the number of dropped ears by the number of plants, the assumption being that each plant had only one ear and that there were no barren stalks.

At Reddick the average percentage of dropped ears for the sixty entries was .92 percent. The 55 hybrids averaged .84 percent, and the 5 open-pollinated varieties averaged 1.72 percent. The range among all entries was from 0 to 3.39 percent. The following hybrids had more than 1 percent of dropped ears: M-L Hybrids 514 and 523; Pioneer Hi-Bred 307; DeKalb Hybrid 821B; Funk Hybrids G212, G532W, and G537W; Iowealth Hybrid CI; National Hybrids 117_3, 118, and 120; Pfister-Stiegelmeier Hybrid 90, and Moews Hybrid 12.

At Littleton the average percentage of dropped ears for the sixty entries was .55 percent. The average of the 55 hybrids was .57 percent, and of the 5 open-pollinated varieties .33 percent. The range among all entries was from 0 to 3.32 percent. More than 1 percent of dropped ears was found in the following hybrids: U. S. Hybrids 13 and 35; M-L Hybrid 514; Illini Hybrids 211 and 222; DeKalb Hybrids 827 and 823; Funk Hybrids G32 and G53; and Iowealth Hybrid CI.

MEASURING PERFORMANCE OF ENTRIES

The entries in 1938 were rated, as they were each year from 1935 to 1937 inclusive, according to two measures of performance—erect plants at harvest (lodging resistance), and yield of sound corn.

Erect Plants. At the time of harvest each plot on the field was examined and the percentage of erect plants estimated. The percentage of erect plants for a given entry was then computed from the estimates of all the replications of that entry. The *rating* for erect plants (relative lodging resistance) was calculated by dividing the percentage of erect plants for each entry by the average percentage of erect plants of all the entries in the field, and multiplying by 100. The best-standing hybrid thus shows the highest rating; the one with the most lodging, the lowest rating.

A difference in lodging resistance of two hybrids is shown in the photograph on page 240. One of the hybrids pictured had an average of 73 percent erect plants for all replications; the other had an average of only 48 percent.

Sound Corn. To determine shelling percentage, the entire yield from one replication of each entry was shelled on the same day it was husked. All the shelled corn from a plot was poured thru an apparatus

called a divider, and a representative sample, consisting of one-eighth of the original quantity, was taken. This sample was divided into two lots, one of which was used for a moisture test and the other for a determination of damaged corn.

The sample saved for the moisture test was preserved in a tight fruit jar. The moisture determinations were made with a Tag-Heppenstall moisture meter within a few days after the samples were taken. The percentage of damaged corn was determined according to the Federal Grain Grade standards.

The total acre-yield was calculated as shelled corn carrying 15.5 percent moisture, the upper limit allowable for No. 2 corn. The yield of sound corn was computed by deducting the amount of damaged corn from the total yield.

The rating on sound yield of an entry is the ratio, expressed as percentage, of the yield of sound corn for that entry to the average yield of sound corn for all the entries on the field.

General Performance Rating. In computing the general performance rating of an entry, the ratings for erect plants and sound corn were averaged, but the sound-corn rating was given three times the weight of the rating for erect plants. It was considered that this weighting is justified by the fact that altho a corn grower is primarily interested in high yields, the standing ability of the crop should at the same time receive consideration.

When two or more entries tied in performance rating, the ties were given the same numerical ranking, but they are listed in the order of their descending yield of sound corn.

Chance Differences. Too much emphasis must not be placed on the *exact* ranking of a hybrid in the following tables, for *chance* has played a part in determining the placing of many of them. Unmeasured differences in soil, in prevalence of insects and diseases, and unaccountable variability in stand will cause differences in yield that are not inherent in the hybrids or varieties.

The part played by chance in the 1938 tests has been calculated by the mathematical procedure known as "analysis of variance." At the bottom of each table the approximate difference in yields needed to show a true difference between the entries is stated. On the Sullivan field, for example, unless the difference between two entries is *at least* 5.4 bushels an acre, there is no assurance that the one is *inherently* higher yielding than the other.

Readers are urged to note the difference necessary for significance, as shown for each test field, and to keep that difference constantly in mind in all comparisons of entries on that field.

1938 RESULTS OF PERFORMANCE TESTS

Northeastern. On the Libertyville field the five best hybrids exceeded the five open-pollinated varieties by 14.0 bushels of sound corn an acre and by 10.4 points in percentage of erect plants. Thirty-eight hybrids had higher general-performance ratings and two had lower general-performance ratings than the five open-pollinated varieties. The five poorest hybrids yielded an average of 2.6 bushels of sound corn per acre less than the open-pollinated varieties; but all the hybrids had higher percentages of erect plants than the open-pollinated varieties. Moisture content ranged from 24 to 34 percent. *(See page 247.)*

Northern. On the Kings field all hybrids had higher general-performance ratings than the five open-pollinated varieties. The five best and the five poorest hybrids exceeded the average of the five open-pollinated varieties by 23.5 and 8.1 bushels, respectively, of sound corn per acre. In percentage of erect plants, the five best hybrids were 21.2 points better, and the five poorest hybrids 12.8 points better than the average of the open-pollinated varieties. *(See page 248.)*

West North-Central. On the Cambridge field the 55 hybrids tested were better than the average of the five open-pollinated varieties. The five best and the five poorest hybrids were 19.3 bushels and 2.5 bushels of sound corn per acre, respectively, better than the average of the five open-pollinated varieties. In percentage of erect plants all the hybrids were better than the average of the open-pollinated varieties, the range being 9.2 to 19.4 points. *(See page 250.)*

East North-Central. On the Reddick field 54 of the 55 hybrids had higher general-performance ratings than the average of the five open-pollinated varieties. The five highest and five lowest hybrids were superior to the open-pollinated varieties by 22.2 bushels and 2.4 bushels of sound corn per acre, respectively. The five best hybrids exceeded the average of the open-pollinated varieties by 21.7 points in percentage of erect plants, while the five poorest hybrids were only 11.8 points better. *(See page 252.)*

West-Central. At Littleton all 55 hybrids had higher general-performance ratings than the five open-pollinated varieties. The five best hybrids were 23.3 bushels of sound corn per acre better than the average of the open-pollinated varieties, while the five poorest hybrids were only 4.3 bushels better. In percentage of erect plants the five best hybrids and the five poorest hybrids were better than the average of the open-pollinated varieties by 19 points and 8.8 points respectively. *(See page 255.)*

East-Central. On the Paxton field all 55 hybrids were better than the average of the five open-pollinated varieties. In yield of sound corn the five best and the five poorest hybrids exceeded the average of

A striking contrast in hybrids on the Sullivan field

Left, a hybrid that had only 48 percent erect stalks as an average of all replications on this field. *Right,* a hybrid that stood 73 percent erect. *Photographs taken September 12, 1938.*

the five open-pollinated varieties by 20.7 bushels and 1.1 bushels per acre, respectively. The five best hybrids were 13.9 points better and the five poorest hybrids, 10.8 points better than the open-pollinated varieties in percentage of erect plants. *(See page 258.)*

South-Central. On the Sullivan field 26 hybrids had higher general-performance ratings than the open-pollinated varieties, while 29 hybrids had lower ratings. The five best hybrids yielded 10.8 bushels more of sound corn per acre than the average of the open-pollinated varieties. The five poorest hybrids yielded 16.3 bushels less than the average of the five open-pollinated varieties. In percentage of erect plants the five best hybrids were 10.6 points higher than the open-pollinated varieties, while the five poorest hybrids were 18.9 points less. *(See page 260.)*

Southern. On the Shobonier field only two hybrids were better than the average of the five open-pollinated varieties in general-performance rating, while 49 hybrids were below that average. Only one hybrid was superior to the best open-pollinated variety. The average of the five best hybrids was 1.3 bushels of sound corn per acre lower

than the five open-pollinated varieties. The five poorest hybrids averaged 17.1 bushels sound corn per acre less than the average of the open-pollinated varieties. In percentage of erect plants, the five best hybrids exceeded the open-pollinated varieties by 9.3 points, while the five poorest hybrids were 8.5 points less than the average of the open-pollinated varieties. *(See page 263.)*

Southeastern. At Albion 26 hybrids had higher general-performance ratings than the average of the open-pollinated varieties, while 19 hybrids had lower performance ratings. The leading hybrids on this field were white corn. The five best hybrids exceeded the average of the five open-pollinated varieties by 10.7 bushels of sound corn per acre. On the other hand, the open-pollinated varieties averaged 8.4 bushels per acre better than the five poorest hybrids. All the hybrids had slightly higher percentages of erect plants than the open-pollinated varieties. *(See page 264.)*

Extreme Southern. On the field near Elizabethtown 28 of the 37 hybrids exceeded the average of the five open-pollinated varieties in general-performance rating. The five best hybrids averaged 11.8 bushels more of sound corn per acre than the five open-pollinated varieties, altho the open-pollinated varieties yielded 1.6 bushels more sound corn to the acre than the five poorest hybrids. In percentage of erect plants there was little difference between the hybrids and the open-pollinated varieties. *(See page 265.)*

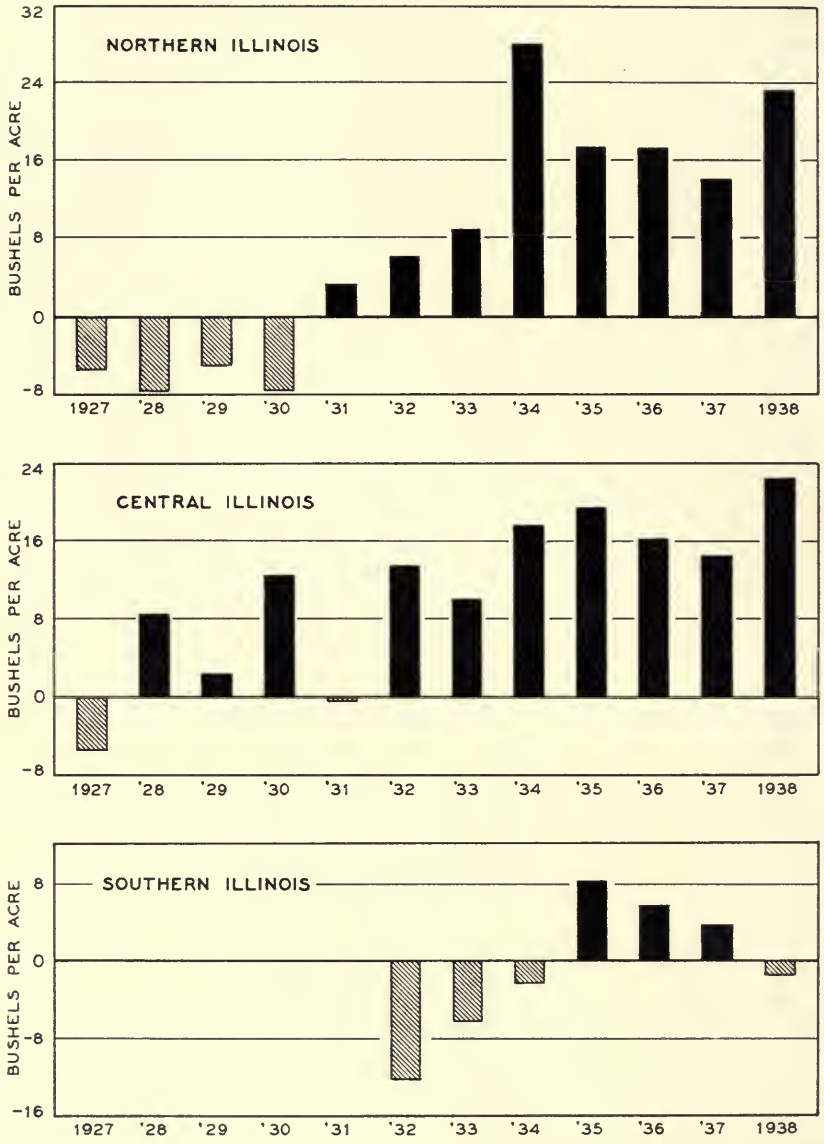
THREE-YEAR AND TWO-YEAR SUMMARIES

The yield in a single year should never be taken as conclusive evidence of the relative value of a hybrid or variety. The importance of data covering several years can hardly be stressed too much.

For seven of the ten fields in the test in 1938 three-year summaries are given. The year 1936 was dry, but both 1937 and 1938 were good corn years. The summaries were computed by using the sectional averages for 1936 and 1937, and data from the individual field in the corresponding section in 1938.

For all fields included in the 1938 tests two-year summaries are now available. The two-year summaries for the north-central and the central sections were obtained by averaging the data on entries which were included in 1938 in the same part of the section as in 1937 tho not necessarily in the same field. For example, the results from entries on the Dwight field in 1937 were averaged with those of the same entries on the Reddick field in 1938.

Northeastern. All 11 hybrids entered in 1937 and 1938 were superior to the open-pollinated varieties in yield of sound corn and in percentage of erect plants. The best hybrid produced 12.3 bushels more of sound corn per acre than the average of the five open-pollinated



Differences between yields of hybrids and open-pollinated varieties 1927-1938

The above bars show the amounts by which the yields of the five best hybrids have exceeded (*black*) or have fallen below (*crosshatch*) the five best open-pollinated varieties, in three sections of Illinois.

varieties. In percentage of erect plants the best hybrid was 19.2 points better than the average of the five open-pollinated varieties. In moisture content there was only a slight difference between the hybrids and the open-pollinated varieties. *(See pages 247 and 249.)*

Northern. The 8 hybrids in the test for three years were consistently better than the average of the five open-pollinated varieties. Both the highest and the lowest hybrids exceeded the average of the five open-pollinated varieties in sound yield by 16.5 bushels and 10.9 bushels an acre, respectively. In percentage of erect plants the best hybrid was 21.1 points better than the average of the five open-pollinated varieties, and the poorest hybrid 9.3 points better. In moisture content the hybrids were about the same as the open-pollinated varieties. On the whole the hybrids had a smaller percentage of damaged corn. *(See page 249.)*

West North-Central. All 8 hybrids in the three-year summary were better than the average of the five open-pollinated varieties. In sound yield the best hybrid was 17.4 bushels per acre higher, and the poorest hybrid 8.7 bushels per acre higher. The best hybrid exceeded the average of the open-pollinated varieties by 23.6 points in percentage of erect plants, and the poorest hybrid was superior by 11.6 points. *(See page 251.)*

East North-Central. Nine hybrids had higher general-performance ratings in the three-year summary than the open-pollinated varieties. The leading hybrid yielded 15.8 bushels more sound corn than the average of the five open-pollinated varieties, and the lowest-yielding hybrid gave 6.1 bushels more than that average. In percentage of erect plants, the best hybrid and the poorest hybrid were both superior to the average of the five open-pollinated varieties, exceeding them by 23.9 and 10.6 points respectively. *(See page 254.)*

West-Central. All 7 hybrids that had been grown for three years had higher yields than the average of the five open-pollinated varieties. The best hybrid yielded 16.9 bushels more of sound corn per acre, and the poorest hybrid 8.3 bushels more than the open-pollinated varieties. In percentage of erect plants the best hybrid exceeded the average of the five open-pollinated varieties by 22.7 points, and the poorest hybrid exceeded that average by 10.8 points. *(See page 257.)*

East-Central. Only 5 hybrids, all of which exceeded the average of the five open-pollinated varieties, were in the tests carried for three years. The highest and the lowest hybrid yielded 17.7 bushels and 11 bushels, respectively, more sound corn per acre than the average of the open-pollinated varieties. In percentage of erect plants the best hybrid was 23.6 and the poorest hybrid was 13.5 points better than the open-pollinated varieties. *(See page 259.)*

South-Central. The three-year summary includes only two

hybrids, both of which exceeded the average of the five open-pollinated varieties in sound yield, altho only one exceeded the best open-pollinated variety. Both hybrids were slightly better than the open-pollinated varieties in percentage of erect plants. These hybrids suffered particularly from the bad weather at the Sullivan field in 1938, while the open-pollinated varieties were able to withstand those adverse conditions more satisfactorily.

The two-year summary for 1938 in south-central Illinois lists nearly twice as many hybrids as the two-year summary in 1937. The 15 hybrids listed in 1938 exceeded the average of the five open-pollinated varieties by amounts ranging from 8.8 bushels to .6 bushel of sound corn per acre. In percentage of erect plants the hybrids ranged from 28.3 to 3 points above the average of the open-pollinated varieties. *(See page 262.)*

Southern. The two-year summary for the field in southern Illinois presents a different story from that of the other fields. At that field only 4 out of 13 hybrids had higher yields than the average of the five open-pollinated varieties. St. Charles White exceeded the highest yielding hybrid by 4.7 bushels an acre. The five best hybrids averaged 1 bushel less of sound corn per acre than the average of the five open-pollinated varieties. However, in percentage of erect plants, 12 of the 13 hybrids exceeded the average of the five open-pollinated varieties by amounts ranging from 14.6 to .6 points. The data in this summary, as well as the single-year results in 1938, show definitely that the tested commercial hybrids are not well adapted to southern Illinois. *(See page 262.)*

Southeastern. The two-year summary shows results similar to those of the central and north-central sections, except that the difference in favor of the hybrids is not so marked. Eight hybrids exceeded in general performance the average of the five open-pollinated varieties. The best hybrid yielded 7.9 bushels more sound corn per acre than the average of the five open-pollinated varieties, and the poorest hybrid 2.7 bushels less than that average. In percentage of erect plants, the best hybrid was 17.9 points and the poorest hybrid 10.1 points above the average of the open-pollinated varieties. *(See page 264.)*

Extreme Southern. No average of open-pollinated varieties is given in the two-year summary to serve as a check, but six hybrids had higher general-performance ratings than Leaming or St. Charles White, and two other hybrids had lower ratings. The best hybrid produced 12.5 bushels more and the poorest hybrid 1.6 bushels less sound corn per acre than Leaming. Only one hybrid had a higher percentage of erect plants than St. Charles White, but this difference was only .2 point, while the poorest hybrid in this respect was 22.8 points less than St. Charles White. *(See page 265.)*

CONTRIBUTORS OF SEED FOR THE 1938 TESTS

Entry	*Contributor*	*Address*
Bear Hybrids	A. Linn Bear	Decatur
Beckerle Yellow Dent	Elmer Beckerle	Columbia
Blackhawk	Otto Kreutzberg	Alhambra
Bunning White Dent	Henry Bunning	Moweaqua
Canterbury Yellow Dent	C. E. Canterbury	Cantrall
Champion White Pearl	F. V. Wilson & Son	Edgewood
Crow Hybrids	Crow Hybrid Corn Co.	Milford
DeKalb Hybrids	DeKalb Agr. Assoc.	DeKalb
Doubet Yellow Dent	E. W. Doubet	Hanna City
Eckhardt Western Plowman	W. G. Eckhardt	DeKalb
Funk Hybrids	Funk Bros. Seed Co.	Bloomington
Gunn Western Plowman	DeKalb Agr. Assoc.	DeKalb
Huebsch Murdock	L. A. Huebsch & Son	Mundelein
Hunt White Dent	Chester A. Hunt	Morris
Illini Hybrids	Illini Corn Hybrids, Inc.	Pekin
Illinois Hybrids 546, 751	L. L. Lowe	Aroma Park
Illinois Hybrids 546, 960	Morgan Bros.	Galva
Illinois Hybrid 546 (McKeighan)	J. L. McKeighan	Yates City
Illinois Hybrids 570, 586, 582, 784, 863, 877, 947	Illini Corn Hybrids, Inc.	Pekin
Illinois Hybrids 588, 753	Sibley Estate	Sibley
Illinois Hybrid 960	Charles Holmes	Edelstein
Iowa Hybrids 939, 942	Behan and Helfert	Sabula, Iowa
Iowealth Hybrids	Michael-Leonard Seed Co.	Chicago
Krug	Krug Bros.	Minonk
Leaming	H. C. Neville	Harrisburg
Maland Yellow Dent	John Maland	Leland
Mangelsdorf Hybrid XX 1	Ed. Mangelsdorf & Bros., Inc.	Atchison, Kans.
McKeighan Yellow Dent	J. L. McKeighan	Yates City
Moews Hybrids	B. E. Moews	Granville
M-L Hybrids 15, 120, 514, 523, 850	B. E. Moews	Granville
M-L Hybrids 14, 20, 30	L. L. Lowe	Aroma Park
Moore Yellow Dent	Illinois Station	Urbana
Morgan Hybrids	Morgan Bros.	Galva
Morgan-Wallace Hybrid 106	Morgan Bros.	Galva
Mountjoy Utility Dent	Oscar Mountjoy	Atlanta
National Hybrids	National Hybrid Corn Co.	Anamosa, Iowa
Pfister-Stiegelmeier Hybrids	Lester Pfister and H. L. Stiegelmeier	El Paso Normal
Pfister-Lazier Hybrids	Lester Pfister and G. A. Lazier	El Paso Rochelle
Pioneer Hi-Breds	Pioneer Hi-Bred Corn Co.	Princeton
P.S.M. 370 (Mittendorf)	O. F. Mittendorf	Lincoln
Rice White Dent	J. R. Rice	Blue Mound
Roeschley Yellow Dent	Leo Roeschley	Graymont
Sommer Yellow Dent	Geo. Pfiefer, Jr.	Arcola
St. Charles White	E. H. Isenberg	Kauffman
Shuman Golden Beauty	Charles Shuman	Sullivan
Station Yellow Dent	Illinois Station	Urbana
U. S. Hybrid 5	Oscar Mountjoy	Atlanta
U. S. Hybrids 13, 35, 61	Illini Corn Hybrids, Inc.	Pekin
U. S. Hybrid 35	Charles Holmes	Edelstein
U. S. Hybrid 44	B. E. Moews	Granville
U. S. Hybrid 44	Morgan Bros.	Galva
Waddell Utility Dents	Elmer Waddell	Taylorville
Webb Will County Favorite	Russell Webb	Plainfield
Wilson Yellow Dent	Edward Wilson	Winchester
Walter-Pfister Hybrids	Arthur Walter and Lester Pfister	Grand Ridge El Paso

PEDIGREES OF ILLINOIS AND U. S. HYBRIDS

Following is a list of Illinois and U. S. hybrids. The performance of those that are starred is shown in this bulletin.

Hybrid No.	*Pedigree*
Ill. 66	(5678 x 5120) (R4 x 317)
Ill. 110	(38-11 x Kys) (Tr x 317)
Ill. 111	(R4 x Kys) (Tr x 317)
Ill. 115	(5120 x Kys) (Tr x 317)
Ill. 126	(WF9 x 38-11) (Tr x 317)
Ill. 156	(Kys x 38-11) (Tr x R4)
Ill. 161	(R4 x Tr) (WF9 x 38-11)
Ill. 172	(R4 x Hy) (A x 540)
Ill. 193	(A x 90) (WF9 x K)
Ill. 200	(WF9 x 38-11)(K4 x 317)
Ill. 201	(WF9 x 38-11)(187 x 317)
Ill. 202	(WF9 x 38-11)(Hy x 4-8)
Ill. 203	(WF9 x 38-11)(289 x 317)
Ill. 204	(WF9 x 38-11)(Hy x 289)
Ill. 205	(WF9 x 38-11)(I159 x 317)
Ill. 206	(WF9 x 38-11)(5120 x 317)
Ill. 207	(WF9 x 4-8) (187 x 317)
Ill. 208	(B2 x 38-11) (K4 x 317)
Ill. 209	(187 x 426) (420 x 317)
Ill. 210	(187 x 426) (A x 90)
Ill. 211	(187 x 426) (WF9 x K)
Ill. 212	(WF9 x 38-11) (4-8 x 187)
Ill. 213	(4-8 x 38-11) (K4 x 317)
Ill. 214	(4-8 x 317) (Kys x 38-11)
Ill. 215	(5120 x 38-11) (187 x 317)
Ill. 216	(90 x 317) (187 x 426)
Ill. 217	(4-8 x 187) (90 x 317)
Ill. 218	(Tr x 38-11) (Hy x 540)
Ill. 219	(CC5 x CC7) (WF9 x Hy)
Ill. 333	(CC2 x CC7) (A x 90)
Ill. 374	(R4 x Hy) (187 x 317)
Ill. 384	(WF9 x R4) (A x Hy)
Ill. 387	(CC5 x CC7) (R4 x Hy)
Ill. 391	(A x Hy) (Tr x 317)
Ill. 407	(4-8 x Hy) (Tr x 317)
Ill. 427	(5120 x 317) (Hy x 540)
Ill. 432	(5120 x 4211) (K4 x 317)
Ill. 435	(5120 x 5678) (K4 x 317)
Ill. 444	(5677 x R4) (K4 x 317)
Ill. 448	(38-11 x Kys) (K4 x 317)
Ill. 450	(R4 x Kys) (K4 x 317)
Ill. 467	(Hy x 5120) (R4 x Kys)
Ill. 468	(Pr x K4) (R4 x Kys)
Ill. 472	(CC5 x CC7) (Hy x 90)
Ill. 473	(A x 4451) (Hy x 90)
Ill. 482	(5120 x 4211) (Hy x Pr)
Ill. 487	(CC5 x CC7) (CC2 x Hy)
Ill. 496	(CC5 x CC7) (90 x 317)
Ill. 498	(5120 x 4211) (701 x 317)
Ill. 499	(Hy x 5120) (701 x 317)
Ill. 538	(5120 x 4211) (R4 x Tr)
Ill. 543	(90 x Hy) (R4 x Tr)
*Ill. 546	(WF9 x Hy) (R4 x Tr)
*Ill. 570	(A x 90) (Hy x 540)
Ill. 571	(Tr x 90) (Hy x 540)
Ill. 579	(Tr x 317) (Hy x 540)
*Ill. 582	(R4 x 317) (Hy x 540)
*Ill. 586	(4226 x A) (Hy x 540)
Ill. 587	(5120 x 4211) (Hy x 540)
Ill. 650	(90 x 4226) (4451 x 5120)
Ill. 651	(5676 x 90) (4451 x 5120)
Ill. 653	(4226 x R4) (4451 x 5120)
Ill. 657	(4226 x A) (4451 x 4211)
Ill. 659	(A x CC5) (4451 x 4211)
Ill. 660	(CC5 x CC7) (4451 x 4211)
Ill. 661	(CC5 x CC7) (4226 x A)
Ill. 663	(4451 x 90) (4226 x A)
Ill. 665	(90 x 4226) (A x K)
Ill. 666	(4451 x 4211) (A x K)
Ill. 677	(Hy x 317) (Pr x K4)
Ill. 678	(R4 x Kys) (Pr x K4)
Ill. 680	(I159 x 317) (Pr x K4)
Ill. 710	(R4 x Hy) (Tr x 317)
*Ill. 751	(A x 90) (WF9 x Hy)
Ill. 754	(R4 x Hy) (90 x 317)
Ill. 762	(A x Hy) (R4 x 317)
Ill. 772	(R4 x Hy) (I159 x 317)
*Ill. 784	(Hy x 5120) (K4 x 317)
Ill. 791	(A x 90) (701 x 317)
Ill. 828	(K x WF9) (4451 x A)
Ill. 847	(WF9 x 4-8) (R4 x Hy)
*Ill. 863	(R4 x Hy) (K4 x 317)
*Ill. 877	(R4 x Pr) (K4 x 317)
Ill. 885A	(R4 x 38-11) (K4 x 317)
Ill. 936	(A x Hy) (90 x 317)
Ill. 940	(5120 x 4211) (I159 x 317)
Ill. 944	(Hy x WF9) (R4 x 317)
*Ill. 947	(R4 x Pr) (Tr x 317)
*Ill. 960	(R4 x Hy) (317 x 701)
Ill. 1001	(5120 x Hy) (R4 x Pr)
Ill. 1010	(540 x 317) (R4 x Pr)
Ill. 1058	(5120 x R4) (Hy x 540)
Ill. 1073	(5120 x Hy) (R4 x 317)
Ill. 1092	(A x 90) (WF9 x CC1)
Ill. 1094	(CC2 x 317) (A x 90)
*U. S. 5	(R4 x 317) (WF9 x 38-11)
*U. S. 13	(Hy x 317) (WF9 x 38-11)
U. S. 14	(Hy x 317) (WF9 x R4)
U. S. 15	(317 x Hy) (WF9 x Tr)
*U. S. 35	(R4 x Hy) (WF9 x 38-11)
*U. S. 44	(4-8 x 187-2) (Hy x 540)
U. S. 45	(461-3 x 4-8) (Hy x 540)
*U. S. 61	(R4 x 4-8) (Hy x 540)
U. S. 65	(Ohio 51 x 4-8) (Hy x 540)

Table 5.—NORTHEASTERN ILLINOIS: Libertyville

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1938	*bu.*	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Pioneer Hi-Bred 349	79.9	78.9	1.26	29	96.5	100.7	116.7	112.7
2	*Funk Hybrid G114	76.8	76.5	.40	32	99.5	103.9	113.2	110.9
3	*DeKalb Hybrid 404A	75.3	75.1	.26	29	98	102.3	111.1	108.9
4	*Pioneer Hi-Bred 321	74.9	74.5	.48	29	95.5	99.7	110.2	107.6
4	*Funk Hybrid G12	74.3	73.8	.66	29	98.5	102.8	109.2	107.6
6	DeKalb Hybrid 421	73.4	73.1	.47	28	97	101.3	108.1	106.4
7	Pioneer Hi-Bred 322	74.7	72.9	2.44	28	97	101.3	107.8	106.2
8	*Funk Hybrid G27	72.0	71.9	.20	28	99.5	103.9	106.4	105.8
9	*Funk Hybrid G26	72.9	72.1	1.03	31	98	102.3	106.7	105.6
10	DeKalb Hybrid 202	71.8	71.7	.17	27	98	102.3	106.1	105.2
11	Funk Hybrid G30	72.0	71.8	.25	30	97	101.3	106.2	105.0
12	DeKalb Hybrid 404	71.2	71.1	.09	29	99	103.3	105.2	104.7
13	Pioneer Hi-Bred 322A	72.3	71.9	.58	29	94.5	98.6	106.4	104.5
14	Funk Hybrid G15	70.7	70.3	.50	29	98.5	102.8	104.0	103.7
15	Pioneer Hi-Bred 335	71.0	70.1	1.24	29	99	103.3	103.7	103.6
16	Iowealth Hybrid AQF	70.5	69.9	.87	30	99	103.3	103.4	103.4
17	DeKalb Hybrid 493	71.1	70.1	1.34	27	96.5	100.7	103.7	103.0
18	Funk Hybrid G8	69.7	69.2	.65	28	99.5	103.9	102.4	102.8
19	Pioneer Hi-Bred 315	70.3	70.0	.40	29	95	99.2	103.6	102.5
20	Iowealth Hybrid 10	69.9	69.5	.58	25	95.5	99.7	102.8	102.0
21	Pioneer Hi-Bred 323	70.4	70.3	.11	28	91	95.0	104.0	101.8
22	DeKalb Hybrid 467	69.1	67.9	1.67	34	99.5	103.9	100.4	101.3
23	*Funk Hybrid G10	68.0	67.5	.76	28	99.5	103.9	99.9	100.9
24	Pioneer Hi-Bred 315A	68.8	67.8	1.45	30	93	97.1	100.3	99.5
25	DeKalb Hybrid 204	66.7	66.5	.34	30	97.5	101.8	98.4	99.3
26	DeKalb Hybrid 203	66.8	66.7	.17	28	96	100.2	98.7	99.1
27	Iowealth Hybrid 12	66.1	65.6	.76	28	99	103.3	97.0	98.6
28	*DeKalb Hybrid 206	66.0	66.0	0	26	94.5	98.6	97.6	97.9
28	*DeKalb Hybrid 433	66.3	65.9	.56	26	95	99.2	97.5	97.9
30	DeKalb Hybrid 498	65.4	65.0	.62	31	97.5	101.8	96.2	97.6
31	DeKalb Hybrid 435	64.9	64.9	0	27	97.5	101.8	96.0	97.5
32	National Hybrid 112	64.1	64.0	.20	28	98.5	102.8	94.7	96.7
33	DeKalb Hybrid 250	64.3	64.0	.42	25	97	101.3	94.7	96.4
34	DeKalb Hybrid 481	63.6	63.6	0	30	98.5	102.8	94.1	96.3
35	Maland Yellow Dent	65.5	65.3	.38	29	90.5	94.5	96.6	96.1
36	National Hybrid 110	65.3	65.0	.40	24	91.5	95.5	96.2	96.0
37	Webb Will County Favorite	65.2	65.2	0	29	86	89.8	96.4	94 8
38	Iowealth Hybrid A	64.0	63.4	.91	24	93	97.1	93.8	94.6
39	National Hybrid 114	62.4	62.1	.43	28	96	100.2	91.9	94.0
40	*Funk Hybrid G7	60.6	60.5	.10	28	98.5	102.8	89.5	92.8
	●Average of 5 open-pollinated varieties	**62.1**	**61.8**	**.58**	**27.6**	**87.2**	**91.0**	**91.4**	**91.3**
41	Eckhardt Western Plowman	61.9	61.7	.31	28	86.5	90.3	91.3	91.1
42	Pioneer Hi-Bred 357	60.2	59.9	.42	24	94	98.1	88.6	91.0
43	Gunn Western Plowman	62.0	61.7	.48	27	85.5	89.2	91.3	90.8
44	DeKalb Hybrid 200	53.7	53.7	0	28	96	100.2	79.4	84.6
45	Huebsch-Murdock Yellow Dent	55.8	55.1	1.32	25	87.5	91.3	81.5	84.0
	Average of all entries	68.0	67.6	.57	28.2	95.8	....	....	....
	Average yield of entries grown in 1937 and 1938								
1	Funk Hybrid 627	72.6	72.6	.10	25.2	89.3	104.9	113.8	111.6
2	DeKalb Hybrid 421	70.7	70.5	.36	25.6	90.5	106.3	110.5	109.5
3	DeKalb Hybrid 404	69.2	69.1	.05	26.7	92.5	108.7	108.3	108.4
4	DeKalb Hybrid 204	67.0	66.9	.17	26.6	92.8	109.0	104.9	105.9
5	DeKalb Hybrid 202	67.1	66.9	.41	25.5	91.0	106.9	104.9	105.4
6	Funk Hybrid G8	67.5	67.2	.50	27.0	88.8	104.3	105.3	105.1
7	DeKalb Hybrid 203	66.1	65.9	.34	25.6	89.0	104.6	103.3	103.6
8	Funk Hybrid G30	65.1	64.6	.72	27.8	92.0	108.1	101.3	103.0
9	DeKalb Hybrid 433	64.4	64.1	.55	24.6	87.0	102.2	100.5	100.9
10	DeKalb Hybrid 493	64.8	63.9	1.39	26.3	86.3	101.4	100.2	100.5
11	DeKalb Hybrid 498	62.2	61.9	.55	28.5	90.3	106.1	97.0	99.3
12	DeKalb Hybrid 435	60.8	60.8	0	26.5	85.8	100.8	95.3	96.7
13	Gunn Western Plowman	60.3	60.1	.40	23.9	74.8	87.9	94.2	92.6
14	Maland Yellow Dent	59.0	58.4	1.06	27.8	75.3	88.5	91.5	90.8
15	Webb Will County Favorite	58.9	58.1	1.50	28.1	76.0	89.3	91.1	90.7
	●Average of 5 open-pollinated varieties	**58.7**	**58.2**	**.82**	**25.6**	**73.6**	**86.5**	**91.2**	**90.0**
16	Huebsch-Murdock Yellow Dent	56.4	56.1	.67	22.6	70.8	83.2	87.9	86.7
	Average of all entries	64.1	63.8	.56	26.1	85.1	....	....	....

*Less than 5 bushels of seed sampled.

(See page 249 for three-year summary.)

Less than 4.8 bushels difference between total yields of any two entries in this table is not considered significant.

Table 6.—NORTHERN ILLINOIS: Kings

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1938	*bu.*	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Moews Hybrid 10	97.6	96.1	1.55	18.5	81	107.1	110.3	109.5
2	Iowealth Hybrid 15	97.7	97.4	.32	19.1	77	101.8	111.8	109.3
3	*M-L Hybrid 20 (Moews-Lowe)	96.6	95.5	1.09	22.4	81.5	107.8	109.6	109.2
4	*M-L Hybrid 14 (Moews-Lowe)	97.6	96.4	1.26	19.6	77.5	102.5	110.7	108.7
5	*Pfister-Lazier Hybrid 368	96.1	94.9	1.25	17.5	79	104.5	109.0	107.9
6	Morgan Hybrid 52	95.4	95.4	0	19.4	76.5	101.2	109.5	107.4
7	Iowealth Hybrid AQF	93.4	93.0	.40	17.8	81	107.1	106.8	106.9
8	Pioneer Hi-Bred 322	93.1	92.6	.52	17.8	82	108.4	106.3	106.8
9	Pioneer Hi-Bred 308D	93.0	92.3	.76	18.5	80	105.8	106.0	106.0
10	Illinois Hybrid 586 (Illini)	91.7	90.6	1.20	17.5	84	111.1	104.0	105.8
11	*M-L Hybrid 15 (Moews-Lowe)	87.3	87.1	.22	18.8	91.5	121.0	100.0	105.3
12	DeKalb Hybrid 602	97.7	96.5	1.19	19.0	66.5	87.9	110.8	105.1
12	Pfister-Stiegelmeier Hybrid 366	92.3	92.2	.16	19.5	77.5	102.5	105.9	105.1
12	Pioneer Hi-Bred 314	92.8	91.7	1.23	18.0	79	104.5	105.3	105.1
15	National Hybrid 118	92.9	92.6	.32	19.5	76	100.5	106.3	104.9
16	Iowealth Hybrid 16	93.3	92.7	.67	19.6	75	99.2	106.4	104.6
17	*M-L Hybrid 30 (Moews-Lowe)	90.0	89.3	.74	19.5	82.5	109.1	102.5	104.2
18	DeKalb Hybrid 467	90.9	90.0	1.01	17.8	79.5	105.1	103.3	103.8
19	DeKalb Hybrid 421	91.7	91.4	.29	18.0	74	97.9	104.9	103.2
20	*Funk Hybrid G104	86.2	85.8	.49	18.3	88.5	117.0	98.5	103.1
21	*Moews Hybrid 12	91.7	91.5	.17	17.8	72	95.2	105.1	102.6
22	Illinois Hybrid 751 (Lowe)	87.3	86.8	.55	20.7	83.5	110.4	99.7	102.4
23	DeKalb Hybrid 622	92.4	91.9	.53	19.0	70	92.6	105.5	102.3
23	*Pioneer Hi-Bred 321	92.0	91.9	.08	17.5	70	92.6	105.5	102.3
25	*National Hybrid 117	88.1	87.6	.61	18.8	81	107.1	100.6	102.2
26	Funk Hybrid G55	90.8	90.3	.52	19.8	73.5	97.2	103.7	102.1
27	*Illini Hybrid 11	88.2	87.2	1.10	20.1	81	107.1	100.1	101.9
28	Pfister-Stiegelmeier Hybrid 260C	90.7	90.7	0	18.3	71.5	94.6	104.1	101.7
28	National Hybrid 119	91.4	89.5	2.12	19.0	74.5	98.5	102.8	101.7
28	*DeKalb Hybrid 404A	86.8	86.6	.19	17.8	82	108.4	99.4	101.7
31	Pioneer Hi-Bred 311	91.3	89.4	2.10	15.8	74.5	98.5	102.6	101.6
31	Funk Hybrid G8	88.4	88.1	.29	18.3	78	103.2	101.1	101.6
31	Funk Hybrid G19	88.1	87.0	1.25	18.3	80.5	106.5	99.9	101.6
34	Iowealth Hybrid 17	89.1	89.0	.16	19.6	74.5	98.5	102.2	101.3
34	Pioneer Hi-Bred 315	90.2	88.6	1.77	18.0	75.5	99.9	101.9	101.3
36	*DeKalb Hybrid 433	88.8	88.8	0	17.1	71.5	94.6	102.0	100.0
37	Pioneer Hi-Bred 322A	88.8	88.2	.64	20.4	70.5	93.2	101.3	99.3
37	Iowealth Hybrid AQ	85.5	85.4	.14	19.6	78	103.2	98.0	99.3
39	Funk Hybrid G68	86.6	86.0	.74	19.8	75	99.2	98.7	98.8
40	DeKalb Hybrid 601	87.2	86.6	.64	18.9	73	96.5	99.4	98.7
41	National Hybrid 117a	84.0	82.7	1.52	18.2	82.5	109.1	94.9	98.5
41	Funk Hybrid G15	81.5	78.9	3.16	18.6	92.5	122.3	90.6	98.5
43	DeKalb Hybrid 600	84.7	84.0	.82	18.9	79	104.5	96.4	98.4
44	Funk Hybrid G30	83.5	81.5	2.39	17.0	85	112.4	93.6	98.3
45	DeKalb Hybrid 498	82.8	82.7	.14	17.5	79.5	105.1	94.9	97.5
46	Pioneer Hi-Bred 315A	90.1	90.0	.10	18.5	59	78.0	103.3	97.0
46	National Hybrid 116	81.9	81.7	.24	18.2	80.5	106.5	93.8	97.0
46	*Funk Hybrid G27	80.9	80.6	.31	17.8	83.5	110.4	92.5	97.0
49	Pioneer Hi-Bred 316	83.7	83.5	.26	19.6	74	97.9	95.9	96.4
50	Morgan-Wallace Hybrid 106 (Morgan)	87.3	86.1	1.32	17.5	64.5	85.3	98.9	95.5
51	Funk Hybrid G23	79.1	79.0	.15	19.6	79.5	105.1	90.7	94.3
52	*Iowa Hybrid 939 (Behan & Helfert)	79.6	78.9	.94	19.1	71	93.9	90.6	91.4
53	*Iowa Hybrid 942 (Behan & Helfert)	78.2	76.1	2.71	17.8	65	86.0	87.4	87.1
54	Gunn Western Plowman	76.7	76.3	.56	17.0	64.5	85.3	87.6	87.0
55	Maland Yellow Dent	75.3	74.9	.54	17.8	60	79.4	86.0	84.4
	● Average of 5 open-pollinated varieties	**73.8**	**72.6**	**1.76**	**17.7**	**58**	**76.8**	**83.4**	**81.8**
56	Eckhardt Western Plowman	70.9	68.8	3.01	16.2	60.5	80.0	79.0	79.3
57	Hunt White Dent	72.1	70.6	2.09	19.6	55	72.7	81.1	79.0
58	Webb Will County Favorite	74.1	72.2	2.62	18.2	50.5	66.8	82.9	78.9
	Average of all entries	87.9	87.1	.88	18.6	75.6	....	....	....

*Less than 5 bushels of seed sampled.

Less than 7 bushels difference between total yields of any two entries in this table is not considered significant.

Table 6A.—TWO- AND THREE-YEAR SUMMARIES, NORTHERN ILLINOIS: Kings

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	Average yield of entries grown in 1936, 1937, 1938								
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	DeKalb Hybrid 421	81.1	80.2	1.34	20.3	71.4	105.7	110.0	108.9
2	[1]Pfister-Lazier Hybrid 368	79.6	78.4	1.80	20.3	75.5	111.7	107.5	108.6
3	DeKalb Hybrid 433	78.5	78.0	.82	20.0	71.0	105.1	107.0	106.5
4	Pioneer Hi-Bred 311	79.5	77.3	3.14	18.3	72.8	107.7	106.0	106.4
5	Illinois Hybrid 751	76.1	75.0	1.68	21.6	77.8	115.1	102.9	106.0
6	[1]Pfister-Stiegelmeier Hybrid 366	77.8	76.8	1.72	22.0	72.7	107.6	105.3	105.9
7	Pioneer Hi-Bred 315	79.5	78.2	1.75	19.7	66.0	97.7	107.3	104.9
8	Illinois Hybrid 586	75.8	74.6	.92	20.5	74.5	110.3	102.3	104.3
9	Gunn Western Plowman	65.8	65.2	1.08	19.4	60.9	90.1	89.4	89.6
10	Eckhardt Western Plowman	64.4	63.1	2.28	19.1	58.6	86.7	86.5	86.6
	● Average of 5 open-pollinated varieties	**64.9**	**63.7**	**2.25**	**20.3**	**56.7**	**83.9**	**87.4**	**86.5**
11	Webb Will County Favorite	65.8	64.4	2.36	20.8	52.9	78.3	88.3	85.8
	Average of all entries	74.1	72.9	1.80	20.2	67.6	....	....	....
	Average yield of entries grown in 1937 and 1938								
1	Moews Hybrid 10	92.4	91.7	.78	22.1	67.0	114.9	108.1	109.8
2	Pioneer Hi-Bred 322	94.5	94.2	.36	19.0	61.5	105.5	111.1	109.7
3	National Hybrid 117	89.9	89.7	.31	21.1	68.5	117.5	105.8	108.7
4	Iowealth Hybrid AQ	89.6	89.4	.26	20.5	68.5	117.5	105.4	108.4
5	Funk Hybrid G19	89.3	88.8	.63	19.7	65.8	112.8	104.7	106.7
6	Illinois Hybrid 751	84.2	83.8	.37	20.6	73.8	126.6	98.8	105.8
7	Pfister-Lazier Hybrid 368	90.2	89.6	.70	20.2	59.5	102.0	105.7	104.8
8	Pioneer Hi-Bred 314	91.5	90.7	.83	19.9	56.5	96.9	107.0	104.5
9	Funk Hybrid G27	87.6	87.5	.16	19.1	62.8	107.6	103.2	104.3
10	Pfister-Stiegelmeier Hybrid 366	89.0	88.9	.08	21.4	59.3	101.6	104.8	104.0
11	DeKalb Hybrid 421	90.3	90.1	.22	21.1	56.0	96.0	106.2	103.7
12	Illinois Hybrid 586	87.7	87.2	.60	19.0	60.5	103.8	102.8	103.1
13	Pioneer Hi-Bred 311	89.4	88.1	1.40	17.9	57.3	98.2	103.9	102.5
14	DeKalb Hybrid 433	88.6	88.5	.13	19.7	54.3	93.0	104.4	101.6
15	Pioneer Hi-Bred 315	90.5	89.7	.90	19.7	51.8	88.7	105.8	101.5
16	Pioneer Hi-Bred 316	84.1	83.6	.61	22.5	64.0	109.8	98.6	101.4
17	Funk Hybrid G23	81.3	81.1	.26	22.1	68.8	117.9	95.6	101.2
18	Funk Hybrid G30	82.1	81.1	1.20	18.8	67.0	114.9	95.6	100.4
19	DeKalb Hybrid 498	84.6	84.5	.14	20.4	59.3	101.6	99.6	100.1
20	DeKalb Hybrid 601	86.8	86.5	.32	20.0	54.5	93.5	102.0	99.9
21	Funk Hybrid G55	87.9	87.6	.26	22.7	50.3	86.2	103.3	99.0
22	Funk Hybrid G8	84.4	84.1	.33	21.2	55.0	94.3	99.2	98.0
23	DeKalb Hybrid 600	83.7	83.2	.60	23.6	55.0	94.3	98.1	97.2
24	Gunn Western Plowman	77.0	76.8	.31	18.4	51.3	87.9	90.6	89.9
25	Maland Yellow Dent	75.6	75.3	.41	19.9	48.0	82.3	88.8	87.2
	● Average of 5 open-pollinated varieties	**73.1**	**72.4**	**1.07**	**20.2**	**47.0**	**80.6**	**85.4**	**84.2**
26	Eckhardt Western Plowman	70.1	68.7	2.04	20.1	48.8	83.6	81.0	81.7
27	Webb Will County Favorite	71.2	70.2	1.41	21.3	41.3	70.7	82.8	79.8
	Average of all entries	85.7	84.8	.58	21.2	58.3	....	....	....

[1]Entered as Illinois hybrids in 1936.

Table 5A.—THREE-YEAR SUMMARY, NORTHEASTERN ILLINOIS: Libertyville, 1936, 1937, 1938

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
1	DeKalb Hybrid 421	70.1	69.8	.47	29.0	85.5	107.4	112.8	111.5
2	DeKalb Hybrid 404	66.5	66.3	.33	30.5	88.8	111.6	107.1	108.2
3	DeKalb Hybrid 203	64.0	63.7	.42	28.0	84.2	105.8	102.9	103.6
4	DeKalb Hybrid 433	64.2	64.0	.43	28.6	82.5	103.6	103.4	103.5
5	Funk Hybrid G30	63.7	63.1	1.08	32.4	83.5	104.9	101.9	102.7
6	DeKalb Hybrid 493	63.9	63.2	1.09	29.0	82.2	103.3	102.1	102.4
7	Gunn Western Plowman	57.2	56.7	.90	28.6	66.8	83.9	91.6	89.7
	● Average of 5 open-pollinated varieties	**54.6**	**54.0**	**1.18**	**29.2**	**64.9**	**81.5**	**87.2**	**85.8**
8	Huebsch-Murdock Yellow Dent	48.6	48.1	1.01	27.3	63.2	79.4	77.7	78.1
	Average of all entries	62.3	61.9	.72	29.2	79.6	....	....	....

Table 7.—WEST NORTH-CENTRAL ILLINOIS: Cambridge

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1938	*bu.*	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	*M-L Hybrid 514 (Moews-Lowe)	98.6	98.5	.06	15.1	72	114.7	110.7	111.7
2	*M-L Hybrid 523 (Moews-Lowe)	99.7	97.4	2.32	15.6	72.5	115.5	109.4	110.9
3	*U. S. Hybrid 44 (Morgan)	102.4	101.1	1.31	15.2	62	98.8	113.6	109.9
4	U. S. Hybrid 44 (Moews)	99.6	99.4	.21	15.3	61.5	98.0	111.7	108.3
5	DeKalb Hybrid 827	92.5	92.4	.06	15.7	75.5	120.3	103.8	107.9
6	*M-L Hybrid 120 (Moews-Lowe)	94.1	93.5	.61	15.6	72.5	115.5	105.0	107.6
7	*U. S. Hybrid 35 (Holmes)	92.2	92.0	.24	15.1	74	117.9	103.4	107.0
8	Pioneer Hi-Bred 307	100.4	98.3	2.14	15.7	58.5	93.2	110.4	106.1
9	Funk Hybrid G63	99.2	98.8	.36	14.6	56.5	90.0	111.0	105.8
10	Pioneer Hi-Bred 313	103.8	103.8	0	18.3	45	71.7	116.6	105.4
10	Illini Hybrid 122	97.5	95.6	2.00	15.4	62.5	99.5	107.4	105.4
12	*DeKalb Hybrid 825	90.2	90.2	.01	17.5	73.5	117.1	101.3	105.3
13	Pfister-Stiegelmeier Hybrid 365	98.9	98.7	.16	15.6	54.5	86.8	110.9	104.9
14	*Illini Hybrid 111	90.9	90.1	.83	16.2	72.5	115.5	101.2	104.8
15	*Pioneer Hi-Bred 318	92.5	92.0	.52	14.4	68	108.3	103.4	104.6
16	DeKalb Hybrid 870	95.4	94.6	.87	15.0	61	97.2	106.3	104.0
17	Pioneer Hi-Bred 308D	96.3	95.7	.66	14.4	58.5	93.2	107.5	103.9
17	Morgan Hybrid 52	89.8	88.6	1.37	14.7	73.5	117.1	99.5	103.9
19	Funk Hybrid G53	89.3	88.0	1.43	15.7	74	117.9	98.9	103.7
20	Pfister-Stiegelmeier Hybrid 360	91.8	91.4	.47	16.4	66.5	105.9	102.7	103.5
21	DeKalb Hybrid 817	91.4	91.2	.22	16.9	66	105.1	102.5	103.2
21	National Hybrid 119$_3$	90.3	90.1	.28	15.5	68.5	109.1	101.2	103.2
21	Moews Hybrid 10	89.7	88.2	1.62	14.4	72.5	115.5	99.1	103.2
24	Funk Hybrid G212	93.8	93.3	.50	15.9	61.5	98.0	104.8	103.1
25	Funk Hybrid G68	88.6	88.5	.06	14.4	71.5	113.9	99.4	103.0
26	Pfister-Stiegelmeier Hybrid 366	91.5	91.5	0	15.7	64	101.9	102.8	102.6
27	*M-L Hybrid 30 (Moews-Lowe)	91.4	90.9	.55	15.9	65	103.5	102.1	102.5
28	Pioneer Hi-Bred 314	95.0	93.1	1.99	14.7	60	95.6	104.6	102.4
29	†Illinois Hybrid 751 (Lowe)	86.5	86.5	0	15.8	73	116.3	97.2	102.0
30	*Tiemann Tested Hybrid 612	91.8	91.4	.46	16.4	61.5	98.0	102.7	101.5
30	Pioneer Hi-Bred 317	90.6	90.2	.44	15.9	64	101.9	101.3	101.5
32	Iowealth Hybrid 15	90.9	90.5	.41	14.9	62.5	99.5	101.7	101.2
33	*M-L Hybrid 14 (Moews-Lowe)	93.6	93.4	.18	15.1	56	89.2	104.9	101.0
34	Pfister-Stiegelmeier Hybrid 360A	90.3	90.3	0	15.4	62	98.8	101.4	100.8
35	Funk Hybrid G55	90.9	90.9	0	14.9	60.5	96.4	102.1	100.7
36	Pfister-Stiegelmeier Hybrid 260	85.5	85.3	.22	15.4	69	109.9	95.8	99.3
37	Illinois Hybrid 960 (Morgan)	89.6	89.2	.40	14.7	59.5	94.8	100.2	98.9
38	Illinois Hybrid 960 (Holmes)	89.6	88.7	1.02	16.0	59.5	94.8	99.6	98.4
38	National Hybrid 117$_3$	84.1	84.1	0	14.2	69	109.9	94.5	98.4
40	DeKalb Hybrid 600	86.8	86.0	.90	15.8	64.5	102.7	96.6	98.1
40	Iowealth Hybrid CI	85.1	84.5	.73	15.9	67.5	107.5	94.9	98.1
42	Funk Hybrid G32	86.8	86.8	0	16.4	62.5	99.5	97.5	98.0
43	Illinois Hybrid 546 (Morgan)	85.1	85.0	.13	17.7	65	103.5	95.5	97.5
44	*Pioneer Hi-Bred 312	87.4	87.2	.26	15.9	58.5	93.2	98.0	96.8
44	DeKalb Hybrid 690	86.0	85.8	.29	14.9	61.5	98.0	96.4	96.8
46	DeKalb Hybrid 652	81.5	81.2	.40	15.7	70	111.5	91.2	96.3
47	Illinois Hybrid 546 (Lowe)	82.9	81.3	1.90	16.9	68.5	109.1	91.3	95.8
48	Iowealth Hybrid 17	89.1	87.3	2.06	15.9	55	87.6	98.1	95.5
49	Funk Hybrid G33	89.3	89.1	.26	15.1	51	81.2	100.1	95.4
50	Iowealth Hybrid AQ	82.1	82.0	.17	13.5	64	101.9	92.1	94.6
51	Tiemann Tested Hybrid 53	90.7	90.1	.62	17.0	45	71.7	101.2	93.8
52	Funk Hybrid G60	84.3	84.3	0	17.0	57	90.8	94.7	93.7
53	National Hybrid 116	78.9	78.0	1.11	15.3	64.5	102.7	87.6	91.4
54	Walter-Pfister Hybrid 274	73.0	72.9	.20	13.9	72	114.7	81.9	90.1
55	Roeschley Yellow Dent	84.2	83.9	.34	15.7	48	76.5	94.3	89.9
56	McKeighan Yellow Dent	80.6	80.4	.29	17.4	55	87.6	90.3	89.6
57	National Hybrid 119	81.7	79.5	2.69	15.7	54	86.0	89.3	88.5
	● Average of 5 open-pollinated varieties	**78.8**	**78.5**	**.37**	**16.5**	**49.3**	**78.5**	**88.2**	**85.8**
58	Krug	76.1	75.8	.34	16.2	51	81.2	85.2	84.2
59	Doubet Yellow Dent	75.0	74.9	.20	17.2	51	81.2	84.1	83.4
60	Hunt White Dent	77.9	77.4	.66	16.0	41.5	66.1	87.0	81.8
	Average of all entries	89.6	89.0	.63	17.6	62.8	....	....	....

*Less than 5 bushels of seed sampled. †Average of 9 plots instead of 10.

Less than 5.6 bushels difference between total yields of any two entries in this table is not considered significant.

Table 7A.—TWO- AND THREE-YEAR SUMMARIES, WEST NORTH-CENTRAL: Cambridge

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	Average yield of entries grown in 1936, 1937, 1938								
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	U. S. Hybrid 44	84.4	83.6	.95	17.1	68.9	104.1	110.4	108.8
2	Funk Hybrid G212	81.2	80.6	.89	17.0	70.6	106.6	106.5	106.5
3	Moews Hybrid 10	79.4	78.6	1.00	16.5	74.8	113.0	103.8	106.1
4	[1]Pfister-Stiegelmeier Hybrid 360	79.0	78.5	.74	17.5	70.0	105.7	103.7	104.2
5	[1]Pfister-Stiegelmeier Hybrid 366	79.4	79.1	.50	17.0	68.2	103.0	104.5	104.1
6	Illinois Hybrid 960	80.3	79.9	.68	17.3	64.1	96.8	105.5	103.3
7	Illinois Hybrid 546	76.1	75.2	1.55	17.8	76.1	115.0	99.3	103.2
8	Illinois Hybrid 751	75.2	74.9	.45	16.9	73.3	110.7	98.9	101.9
9	McKeighan Yellow Dent	68.4	67.8	1.18	19.2	57.1	86.3	89.6	88.8
10	Roeschley Yellow Dent	69.0	68.4	1.13	18.2	53.1	80.2	90.4	87.9
	● Average of 5 open-pollinated varieties	**66.9**	**66.2**	**1.40**	**18.4**	**52.5**	**79.3**	**87.5**	**85.5**
	Average of all entries	76.3	75.7	.95	17.5	66.2	....	....	....
	Average yield of entries grown in 1937 and 1938								
1	Pioneer Hi-Bred 307	113.3	111.9	1.36	17.0	60.8	109.8	109.6	109.7
1	DeKalb Hybrid 825	103.6	103.3	.24	18.9	74.8	135.1	101.2	109.7
3	Moews Hybrid 10	106.6	105.7	.92	15.9	68.8	124.3	103.5	108.7
4	U. S. Hybrid 44 (Moews)	111.2	110.9	.23	16.3	56.3	101.7	108.6	106.9
5	Funk Hybrid G212	108.6	108.3	.26	17.1	59.8	108.0	106.1	106.6
6	Pfister-Stiegelmeier Hybrid 360A	108.4	108.4	0	16.9	59.0	106.6	106.2	106.3
7	Morgan Hybrid 52	107.1	106.4	.78	16.6	60.8	109.8	104.2	105.6
8	Illinois Hybrid 546 (Morgan)	103.1	103.0	.15	17.5	65.5	118.3	100.9	105.3
8	Iowealth Hybrid AQ	100.4	99.8	.52	15.4	71.0	128.2	97.7	105.3
10	Pioneer Hi-Bred 317	105.1	104.5	.51	17.1	62.5	112.9	102.3	105.0
11	DeKalb Hybrid 870	108.4	107.8	.63	17.1	54.5	98.4	105.6	103.8
12	Funk Hybrid G32	104.8	104.7	.07	17.8	59.3	107.1	102.5	103.7
13	Illinois Hybrid 751	100.4	100.4	0	16.7	65.5	118.3	98.3	103.3
14	Pfister-Stiegelmeier Hybrid 360	104.7	104.2	.47	17.6	55.3	99.9	102.1	101.6
15	Pioneer Hi-Bred 314	103.6	102.4	1.21	16.5	57.5	103.9	100.3	101.2
16	Illinois Hybrid 960 (Morgan)	104.8	104.5	.27	17.5	52.3	94.5	102.3	100.4
17	Pfister-Stiegelmeier Hybrid 366	101.9	101.9	0	17.8	55.0	99.3	99.8	99.7
18	Pioneer Hi-Bred 312	103.9	103.6	.28	17.9	50.3	90.9	101.5	98.9
19	Funk Hybrid G55	101.8	101.7	.10	16.5	52.8	95.4	99.6	98.6
20	Funk Hybrid G33	105.3	105.0	.30	16.8	46.0	83.1	102.8	97.9
21	Funk Hybrid G60	99.7	99.6	.14	17.4	52.5	94.8	97.5	96.8
22	McKeighan Yellow Dent	92.3	92.1	.27	19.4	45.0	81.3	90.2	88.0
23	Roeschley Yellow Dent	94.5	93.9	.62	17.9	36.5	65.9	92.0	85.5
	● Average of 5 open-pollinated varieties	**91.7**	**91.3**	**.48**	**18.5**	**39.2**	**70.8**	**89.4**	**84.8**
24	Krug	91.9	91.4	.41	17.8	38.0	68.6	89.5	84.3
25	Doubet Yellow Dent	88.4	88.0	.49	18.2	40.5	73.2	86.2	83.0
	Average of all entries	102.5	102.1	.47	18.5	55.4	....	....	....
	[2]DeKalb Hybrid 600	89.4	88.8	.67	16.5	64.8	....	....	....

[1]Entered as Illinois hybrids in 1936. [2]Entered in Henry field in 1937.

Table 8.—EAST NORTH-CENTRAL ILLINOIS: Reddick

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1938	*bu.*	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	*M-L Hybrid 514 (Moews-Lowe)	78.2	77.9	.39	12.6	83	117.0	121.1	120.1
2	*M-L Hybrid 20 (Moews-Lowe)	76.2	75.5	.95	14.6	82	115.6	117.3	116.9
3	Pioneer Hi-Bred 313	77.9	76.6	1.62	13.5	75	105.7	119.1	115.8
4	*M-L Hybrid 14 (Moews-Lowe)	76.1	74.8	1.76	13.7	75.5	106.5	116.3	113.9
5	Pioneer Hi-Bred 307	73.4	73.1	.47	13.3	74	104.3	113.6	111.3
6	Iowealth Hybrid 15	71.7	70.9	1.10	12.6	81	114.2	110.2	111.2
7	Illinois Hybrid 960 (Holmes)	72.7	70.3	3.24	13.2	78	110.0	109.3	109.5
8	*Pioneer Hi-Bred 312	70.3	69.7	.79	13.5	77.5	109.3	108.3	108.6
9	Pfister-Stiegelmeier Hybrid 380	71.7	71.1	.82	15.3	72.5	102.2	110.5	108.4
10	*M-L Hybrid 523 (Moews-Lowe)	69.8	69.8	.04	13.9	73.5	103.6	108.5	107.3
11	DeKalb Hybrid 821B	70.0	69.5	.73	14.6	72.5	102.2	108.0	106.6
12	Funk Hybrid G32	67.6	67.3	.49	13.5	79.5	112.1	104.6	106.5
13	Funk Hybrid G212	71.2	68.5	3.79	12.4	75	105.7	106.5	106.3
14	Moews Hybrid 10	69.2	68.7	.73	12.4	72.5	102.2	106.8	105.7
15	DeKalb Hybrid 606	71.9	70.9	1.44	14.3	65	91.6	110.2	105.6
16	Illinois Hybrid 751 (Lowe)	68.9	68.6	.41	13.5	72.5	102.2	106.6	105.5
17	U. S. Hybrid 44 (Moews)	67.5	67.1	.54	13.7	73.5	103.6	104.3	104.1
18	Iowealth Hybrid CI	66.2	65.4	1.24	13.7	78.5	110.7	101.6	103.9
19	Pfister-Stiegelmeier Hybrid 365	70.5	68.5	2.90	13.2	67.5	95.2	106.5	103.7
20	Illinois Hybrid 582 (Illini)	68.9	68.7	.32	13.2	66.5	93.8	106.8	103.6
21	Pioneer Hi-Bred 308D	68.4	66.5	2.75	12.6	73	102.9	103.4	103.3
22	DeKalb Hybrid 628	67.2	67.2	0	14.6	70.5	99.4	104.4	103.2
23	Funk Hybrid G33	67.4	67.2	.26	14.5	69.5	98.0	104.4	102.8
24	*Crow Hybrid 602	68.6	67.4	1.68	12.6	64.5	90.9	104.8	101.3
24	DeKalb Hybrid 639	67.6	66.8	1.19	14.3	66.5	93.8	103.8	101.3
26	*Funk Hybrid G532W	70.2	69.8	.52	11.9	56	79.0	108.5	101.1
27	Morgan Hybrid 52	65.3	64.5	1.18	13.0	73	102.9	100.2	100.9
28	Pfister-Stiegelmeier Hybrid 160	64.5	64.0	.78	14.6	73.5	103.6	99.5	100.5
29	*Iowealth Hybrid 16A	65.5	62.9	4.04	11.7	76.5	107.9	97.8	100.3
29	National Hybrid 117	62.7	61.7	1.57	11.5	80.5	113.5	95.9	100.3
29	Funk Hybrid G66	61.9	61.7	.30	12.9	80.5	113.5	95.9	100.3
32	U. S. Hybrid 61 (Illini)	67.1	64.9	3.24	11.5	69.5	98.0	100.9	100.2
33	Pioneer Hi-Bred 314	65.8	63.5	3.46	12.4	74	104.3	98.7	100.1
34	DeKalb Hybrid 823	64.5	63.8	1.06	13.5	72.5	102.2	99.2	100.0
35	Funk Hybrid G55	65.7	65.7	0	12.4	66	93.1	102.1	99.9
36	*U. S. Hybrid 35 (Holmes)	63.5	61.7	2.84	14.9	79	111.4	95.9	99.8
37	Ill. Hybrid 588 (Sibley Estate)	65.2	63.4	2.73	14.6	71.5	100.8	98.5	99.1
37	Funk Hybrid G74	62.2	61.9	.48	14.6	76.5	107.9	96.2	99.1
39	*Tiemann Tested Hybrid 612	65.1	63.4	2.68	14.6	70.5	99.4	98.5	98.7
40	*Pioneer Hi-Bred 318	64.5	62.4	3.28	12.2	73	102.9	97.0	98.5
41	*Funk Hybrid G537W	61.9	61.9	0	14.6	73	102.9	96.2	97.9
41	Ill. Hybrid 753 (Sibley Estate)	61.6	61.3	.54	14.1	75	105.7	95.3	97.9
43	Pfister-Stiegelmeier Hybrid 90	63.7	62.6	1.72	14.1	69	97.3	97.3	97.3
44	Pioneer Hi-Bred 317	62.2	61.9	.42	13.2	71	100.1	96.2	97.2
45	*Crow Hybrid 402	63.4	63.2	.38	13.5	65	91.6	98.2	96.6
46	Illinois Hybrid 570 (Lowe)	62.9	62.2	1.18	13.2	67.5	95.2	96.7	96.3
47	National Hybrid 118	61.5	60.9	.98	13.7	69.5	98.0	94.7	95.5
48	*†Moews Hybrid 12	62.0	61.2	1.37	12.6	65.5	92.4	95.1	94.4
49	Walter-Pfister Hybrid 374	57.0	56.8	.43	12.2	78.5	110.7	88.3	93.9
50	National Hybrid 120	59.7	59.5	.38	12.8	69	97.3	92.5	93.7
51	Iowealth Hybrid AQ	61.1	60.8	.57	11.6	64	90.2	94.5	93.4
52	Illinois Hybrid 546 (Lowe)	60.4	57.5	4.83	14.3	74.5	105.0	89.4	93.3
53	Morgan-Wallace Hybrid 106 (Morgan)	62.3	59.3	4.89	13.0	65.5	92.4	92.2	92.3
54	Roeschley Yellow Dent	59.9	59.6	.53	16.0	57.5	81.1	92.6	89.7
55	McKeighan Yellow Dent	53.6	53.4	.43	17.4	64.5	90.9	83.0	85.0
56	*DeKalb Hybrid 922 (W)	51.4	51.0	.87	18.7	71.5	100.8	79.3	84.7
57	Krug	56.0	55.8	.35	15.8	49.5	69.8	86.7	82.5
	●Average of 5 open-pollinated varieties	**54.2**	**53.4**	**1.67**	**15.6**	**56.2**	**79.2**	**83.0**	**82.0**
58	*DeKalb Hybrid 702(W)	50.7	50.3	.70	17.6	64.5	90.9	78.2	81.4
59	Hunt White Dent	52.5	50.5	3.79	14.7	50	70.5	78.5	76.5
59	Doubet Yellow Dent	49.2	47.6	3.27	14.3	59.5	83.9	74.0	76.5
	Average of all entries	65.3	64.3	1.42	13.7	70.9	....	....	....

*Less than 5 bushels of seed sampled. †Average of 9 plots instead of 10.

Less than 4.5 bushels difference between total yields of any two entries in this table is not considered significant.

Table 8A.—RESISTANCE TO LODGING: E. North-Central, Reddick
Lodging caused by feeding of southern corn rootworm[1]

Rank	Entry	Plants leaning 30 degrees or more	Plants leaning more than 45 degrees	Resistance rating compared with average[2]
	1938	*perct.*	*perct.*	
1	Funk Hybrid G32	20.1	.6	284
2	M-L Hybrid 514 (Moews-Lowe)	19.8	2.1	253
3	Iowealth Hybrid 15	17.5	3.3	251
4	Funk Hybrid G66	22.9	1.3	238
5	M-L Hybrid 14 (Moews-Lowe)	24.8	1.3	222
6	Illinois Hybrid 960 (Holmes)	21.6	3.0	220
7	DeKalb Hybrid 821B	23.3	3.0	207
8	M-L Hybrid 20 (Moews-Lowe)	27.5	1.6	197
9	DeKalb Hybrid 823	27.9	2.0	190
10	U. S. Hybrid 35 (Holmes)	29.6	2.1	180
11	Pioneer Hi-Bred 312	28.7	2.9	176
12	National Hybrid 117$_3$	28.2	3.6	172
13	Pioneer Hi-Bred 308D	31.2	3.1	163
14	M-L Hybrid 523 (Moews-Lowe)	29.1	4.5	159
15	Moews Hybrid 10	35.2	2.2	154
16	Walter-Pfister Hybrid 374	35.1	2.7	150
17	Illinois Hybrid 753 (Sibley)	32.6	4.6	145
18	Tiemann Tested Hybrid 612	38.0	3.9	133
19	Illinois Hybrid 546 (Lowe)	37.0	4.6	132
20	Funk Hybrid G537W	38.0	4.5	129
21	Morgan Hybrid 52	36.6	5.4	128
22	Pioneer Hi-Bred 317	36.9	6.3	123
23	Iowealth Hybrid 16A	39.2	5.3	122
24	Iowealth Hybrid CI	38.8	5.5	122
25	Pioneer Hi-Bred 313	46.2	2.1	121
26	Funk Hybrid G212	40.9	4.8	120
27	Illinois Hybrid 582 (Illini)	38.1	6.3	120
28	Pioneer Hi-Bred 318	41.9	5.3	116
29	DeKalb Hybrid 922 (W)	45.8	4.9	109
30	Pfister-Stiegelmeier Hybrid 90	40.8	7.8	108
31	Pfister-Stiegelmeier Hybrid 380	47.1	5.1	106
32	Pioneer Hi-Bred 307	46.8	5.2	106
33	Funk Hybrid G74	49.8	4.2	104
34	DeKalb Hybrid 639	44.0	7.5	103
35	Pioneer Hi-Bred 314	44.0	7.9	102
36	Pfister-Stiegelmeier Hybrid 160	43.9	8.8	99
37	Illinois Hybrid 751 (Lowe)	48.9	6.7	97
38	National Hybrid 120	46.4	8.5	96
39	Illinois Hybrid 588 (Sibley)	52.3	6.0	94
40	DeKalb Hybrid 628	50.5	7.3	93
41	U. S. Hybrid 44 (Moews)	56.0	5.3	91
42	Crow Hybrid 602	54.0	7.5	88
43	Morgan-Wallace Hybrid 106	55.7	7.2	87
44	Moews Hybrid 12	49.4	10.5	86
45	Funk Hybrid G33	58.2	7.6	83
46	Illinois Hybrid 570 (Lowe)	56.2	9.0	82
47	Pfister-Stiegelmeier Hybrid 365	61.5	8.4	78
48	Funk Hybrid G55	60.7	9.3	77
49	National Hybrid 118	52.3	14.5	75
50	DeKalb Hybrid 606	64.4	10.3	72
51	U. S. Hybrid 61 (Illini)	57.5	14.7	70
52	Crow Hybrid 402	66.0	12.7	67
53	Iowealth Hybrid AQ	51.4	21.8	64
54	Funk Hybrid G532W	62.6	16.8	63
55	Krug	66.2	15.8	62
56	McKeighan Yellow Dent	70.5	15.9	59
57	DeKalb Hybrid 702 (W)	75.3	15.6	57
58	Doubet Yellow Dent	79.3	14.3	56
59	Roeschley Yellow Dent	81.8	28.3	44
60	Hunt White Dent	89.3	45.8	34
	Average of all entries	45.2	7.8	100

[1]Southern corn rootworm, *Diabrotica duodecimpunctata* Fab. See also text, pages 231 and 232.
[2]Average resistance of all entries = 100. High rating indicates increased standing ability.

Table 8B.—TWO- AND THREE-YEAR SUMMARIES, EAST NORTH-CENTRAL: Reddick

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	Average yield of entries grown in 1936, 1937, 1938								
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Funk Hybrid G212	73.7	72.3	1.99	15.9	75.1	110.0	107.0	107.8
2	Illinois Hybrid 960	74.7	73.6	1.53	16.5	70.2	102.9	109.0	107.5
3	Moews Hybrid 10	72.5	72.1	.70	15.9	74.8	109.6	106.7	107.4
4	U. S. Hybrid 44 (Moews)	73.2	72.6	.88	16.6	72.8	106.7	107.5	107.3
5	Illinois Hybrid 582	73.4	72.9	.74	16.5	66.8	97.9	107.9	105.4
6	U. S. Hybrid 61	71.8	70.7	1.68	15.4	70.7	103.6	104.7	104.4
7	Illinois Hybrid 751	69.3	68.9	.58	16.2	73.1	107.1	102.0	103.3
8	Illinois Hybrid 546	68.3	66.7	2.82	16.8	78.7	115.3	98.7	102.9
9	Illinois Hybrid 570	64.6	63.9	1.07	15.9	65.4	95.8	94.6	94.9
10	Roeschley Yellow Dent	60.9	60.3	1.19	18.3	56.3	82.5	89.3	87.6
11	McKeighan Yellow Dent	59.4	58.8	1.23	19.2	60.3	88.4	87.0	87.4
	● Average of 5 open-pollinated varieties	**58.7**	**57.8**	**1.84**	**18.1**	**54.8**	**80.3**	**85.6**	**84.3**
	Average of all entries	68.4	67.6	1.35	16.8	68.3	....	....	....
	Average yield of entries grown in 1937 and 1938								
1	Pioneer Hi-Bred 307	73.6	73.3	.35	13.8	75.0	110.3	111.7	111.4
2	Funk Hybrid G212	70.9	69.5	1.99	13.8	75.0	110.3	105.9	107.0
3	U. S. Hybrid 44 (Moews)	70.5	70.1	.42	14.7	72.3	106.3	106.9	106.8
3	Illinois Hybrid 751	70.0	69.8	.28	14.6	73.3	107.8	106.4	106.8
5	Funk Hybrid G32	68.0	67.9	.25	14.7	77.3	113.7	103.5	106.1
6	Pfister-Stiegelmeier Hybrid 380	69.4	69.1	.41	15.5	71.3	104.9	105.3	105.2
7	U. S. Hybrid 61	69.8	68.6	1.82	12.9	71.3	104.9	104.6	104.7
8	Moews Hybrid 10	68.0	67.8	.37	13.9	71.3	104.9	103.4	103.8
9	National Hybrid 118	67.3	67.0	.49	14.0	73.8	108.5	102.1	103.7
10	Illinois Hybrid 960	69.1	67.9	1.68	14.7	70.5	103.7	103.5	103.6
11	Illinois Hybrid 588 (Sibley Estate)	70.0	69.1	1.37	16.1	66.3	97.5	105.3	103.4
12	DeKalb Hybrid 639	69.7	69.2	.73	15.0	64.8	95.3	105.5	103.0
12	Pioneer Hi-Bred 312	68.4	68.1	.40	14.9	68.3	100.4	103.8	103.0
14	DeKalb Hybrid 628	68.1	67.8	.42	15.4	68.8	101.2	103.4	102.9
15	Illinois Hybrid 582	68.2	68.0	.21	14.4	67.8	99.7	103.7	102.7
15	Funk Hybrid G33	67.5	67.4	.13	14.9	69.8	102.6	102.7	102.7
17	Illinois Hybrid 546	66.4	65.0	2.42	15.5	75.8	111.5	99.1	102.2
18	Morgan Hybrid 52	65.0	64.6	.59	13.9	76.5	112.5	98.5	102.0
19	Illinois Hybrid 753 (Sibley Estate)	64.7	64.5	.27	15.4	74.5	109.6	98.3	101.1
20	Iowealth Hybrid AQ	65.0	64.8	.29	13.0	73.0	107.4	98.8	101.0
21	Pioneer Hi-Bred 317	66.0	65.8	.27	14.7	69.5	102.2	100.3	100.8
22	Funk Hybrid G55	66.8	66.8	0	13.9	66.0	97.1	101.8	100.6
23	Pioneer Hi-Bred 314	65.1	63.9	1.87	14.1	72.5	106.6	97.4	99.7
24	DeKalb Hybrid 606	66.9	66.4	.72	15.0	63.5	93.4	101.2	99.3
25	Morgan-Wallace Hybrid 106	63.8	62.3	2.45	14.4	66.3	97.5	95.0	95.6
26	Roeschley Yellow Dent	61.1	60.9	.39	16.9	64.8	95.3	92.8	93.4
27	Illinois Hybrid 570	61.0	60.6	.68	14.0	57.3	84.3	92.4	90.4
28	McKeighan Yellow Dent	56.9	56.8	.22	18.1	60.3	88.7	86.6	87.1
29	Krug	60.6	60.5	.18	17.1	43.8	64.4	92.2	85.3
	● Average of 5 open-pollinated varieties	**57.1**	**56.7**	**.93**	**17.0**	**54.1**	**79.6**	**86.4**	**84.7**
30	Doubet Yellow Dent	54.1	53.1	1.86	16.3	53.8	79.1	80.9	80.5
	Average of all entries	66.4	65.6	.79	14.9	68.0	....	....	....

Table 9.—WEST-CENTRAL ILLINOIS: Littleton

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1938	bu.	bu.	perct.	perct.	perct.	perct.	perct.	
1	*U. S. Hybrid 13 (Illini)	68.4	67.4	1.39	18.8	56.5	123.1	118.4	119.6
2	*Bear Hybrid OK-4	68.9	68.4	.78	17.7	48	104.6	120.2	116.3
3	*M-L Hybrid 514 (Moews-Lowe)	68.3	67.1	1.82	16.3	51	111.1	117.9	116.2
4	*U. S. Hybrid 35 (Illini)	64.8	64.0	1.20	18.6	57.5	125.3	112.5	115.7
5	DeKalb Hybrid 628	68.9	68.1	1.17	15.4	45	98.0	119.7	114.3
6	DeKalb Hybrid 821B	66.1	63.4	4.01	19.4	56	122.0	111.4	114.1
6	*M-L Hybrid 523 (Moews-Lowe)	62.4	62.2	.32	17.3	59	128.5	109.3	114.1
8	*Bear Hybrid OK-38	68.5	67.4	1.64	18.5	43	93.7	118.4	112.2
9	National Hybrid 119$_2$	66.7	65.6	1.71	16.4	46	100.2	115.3	111.5
10	*Illini Hybrid 211	65.0	63.5	2.33	18.8	49	106.8	111.6	110.4
11	*M-L Hybrid 120 (Moews-Lowe)	60.3	59.2	1.90	18.6	58	126.4	104.0	109.6
12	Funk Hybrid G94	61.6	60.4	1.98	18.4	54	117.6	106.1	109.0
12	DeKalb Hybrid 827	60.9	59.6	2.16	17.5	56	122.0	104.7	109.0
14	Pioneer Hi-Bred 307	64.1	62.9	1.84	17.0	47	102.4	110.5	108.5
15	Funk Hybrid G212	62.8	62.2	.98	16.7	48.5	105.7	109.3	108.4
16	Funk Hybrid G33	63.3	62.4	1.43	15.8	46	100.2	109.7	107.3
17	DeKalb Hybrid 817	61.1	60.6	.88	17.0	49	106.8	106.5	106.6
18	Funk Hybrid G32	62.1	61.6	.87	16.5	45	98.0	108.3	105.7
19	Pioneer Hi-Bred 313	63.2	63.0	.26	15.6	41	89.3	110.7	105.4
20	Illinois Hybrid 960 (Holmes)	61.0	60.1	1.50	16.7	47.5	103.5	105.6	105.1
20	DeKalb Hybrid 823	58.3	57.4	1.61	17.4	54	117.6	100.9	105.1
22	*Pioneer Hi-Bred 304	62.9	60.9	3.24	19.5	45	98.0	107.0	104.8
23	*Tiemann Tested Hybrid 221	61.1	60.5	.92	18.8	45	98.0	106.3	104.2
24	Iowealth Hybrid CI	61.5	60.6	1.51	16.8	44	95.9	106.5	103.9
25	Funk Hybrid G53	55.7	54.4	2.30	16.1	59	128.5	95.6	103.8
26	*Illini Hybrid 222	56.8	55.7	1.94	19.0	55	119.8	97.9	103.4
27	Iowealth Hybrid AQ	59.9	58.9	1.63	16.3	47	102.4	103.5	103.2
28	Iowealth Hybrid 53	57.9	57.1	1.34	17.1	51	111.1	100.3	103.0
29	U. S. Hybrid 44 (Moews)	61.6	60.1	2.39	15.8	42	91.5	105.6	102.1
30	DeKalb Hybrid 652	58.1	57.1	.67	15.5	49	106.8	100.3	101.9
31	*U. S. Hybrid 5 (Mountjoy)	59.2	57.7	2.49	16.3	47	102.4	101.4	101.7
32	Pfister-Stiegelmeier Hybrid 360	60.2	59.2	1.62	16.3	43	93.7	104.0	101.4
33	*Pioneer Hi-Bred 302	60.4	60.1	.42	16.7	40	87.1	105.6	101.0
34	Pfister-Stiegelmeier Hybrid 360A	58.7	57.7	1.62	17.0	45	98.0	101.4	100.6
34	*Pioneer Hi-Bred 318	55.8	55.5	.56	15.8	50.5	110.0	97.5	100.6
36	*Bear Hybrid OK-35	61.6	60.9	1.12	16.1	37	80.6	107.0	100.4
37	Pfister-Stiegelmeier Hybrid 366	58.7	57.8	1.48	16.1	44	95.9	101.6	100.2
38	Funk Hybrid G102	58.1	57.0	1.84	16.8	45.5	99.1	100.2	99.9
39	Ill. Hybrid 588 (Sibley Estate)	57.3	56.5	1.32	19.2	44	95.9	99.3	98.5
40	Iowealth Hybrid 50	55.3	54.8	.91	15.6	48	104.6	96.3	98.4
41	Funk Hybrid G244T	57.2	56.8	.64	17.0	41	89.3	99.8	97.2
42	Pfister-Stiegelmeier Hybrid 260	54.9	54.4	.93	16.7	46	100.2	95.6	96.8
43	National Hybrid 131	56.1	53.1	5.32	16.5	49	106.8	93.3	96.7
44	Pfister-Stiegelmeier Hybrid 160	56.2	54.5	3.03	16.7	45	98.0	95.8	96.4
45	*Pioneer Hi-Bred 312	53.7	52.9	1.44	16.7	45	98.0	93.0	94.3
46	*Tiemann Tested Hybrid 613	54.0	52.2	3.33	16.5	46	100.2	91.7	93.8
47	Funk Hybrid G244	51.3	50.7	1.17	17.4	49	106.8	89.1	93.5
48	National Hybrid 130	52.4	52.0	.84	17.5	41	89.3	91.4	90.9
49	Ill. Hybrid 753 (Sibley Estate)	53.9	53.0	1.65	19.2	38	82.8	93.1	90.5
50	Illinois Hybrid 546 (McKeighan)	49.5	48.3	2.38	18.0	49	106.8	84.9	90.4
51	DeKalb Hybrid 871	49.9	48.8	2.25	18.4	41	89.3	85.8	86.7
52	DeKalb Hybrid 690	50.5	48.6	3.81	18.4	41	89.3	85.4	86.4
53	*Pioneer Hi-Bred 305A	48.2	47.2	2.07	18.8	43	93.7	82.9	85.6
54	*Iowealth Hybrid 22	51.2	49.6	3.15	14.9	36	78.4	87.2	85.0
55	Pioneer Hi-Bred 317	47.4	45.6	3.86	16.3	41	89.3	80.1	82.4
56	†Station Yellow Dent	48.0	46.3	3.50	18.4	34	74.1	81.4	79.6
57	McKeighan Yellow Dent	44.4	44.2	.44	18.2	34	74.1	77.7	76.8
58	Sommer Yellow Dent	45.2	44.4	1.66	19.5	31	67.5	78.0	75.4
	● Average of 5 open-pollinated varieties	**44.4**	**43.7**	**1.37**	**19.1**	**32.6**	**71.0**	**76.9**	**75.4**
59	Mountjoy Utility Dent	42.6	42.3	.80	20.1	32	69.7	74.3	73.2
60	Doubet Yellow Dent	41.9	41.5	1.03	19.5	32	69.7	72.9	72.1
	Average of all entries	57.9	56.9	1.74	17.3	45.9	....	....	....

*Less than 5 bushels of seed sampled. †Average of 9 plots instead of 10.

Less than 4.5 bushels difference between total yields of any two entries in this table is not considered significant.

Table 9A.—RESISTANCE TO LODGING: West-Central, Littleton
Lodging caused by feeding of southern corn rootworm[1]

Rank	Entry	Plants leaning 30 degrees or more	Plants leaning more than 45 degrees	Resistance rating compared with average[2]
	1938	*perct.*	*perct.*	
1	DeKalb Hybrid 827	63.6	2.7	157
2	Funk Hybrid G53	65.2	4.4	146
3	M-L Hybrid 120 (Moews-Lowe)	69.4	2.7	144
4	U. S. Hybrid 35 (Illini)	69.1	3.7	141
5	M-L Hybrid 523 (Moews-Lowe)	68.6	5.1	137
6	DeKalb Hybrid 821B	71.8	4.3	134
7	DeKalb Hybrid 823	71.0	5.1	133
8	DeKalb Hybrid 652	70.6	6.0	131
9	DeKalb Hybrid 817	70.7	5.9	131
10	U. S. Hybrid 5 (Mountjoy)	73.8	5.7	127
11	Illini Hybrid 222	73.1	6.7	125
12	Funk Hybrid G94	78.1	5.6	121
13	U. S. Hybrid 13 (Illini)	75.3	7.9	118
14	Pioneer Hi-Bred 318	71.9	9.7	118
15	Funk Hybrid G32	76.0	7.8	118
16	National Hybrid 130	69.4	11.1	118
17	M-L Hybrid 514 (Moews-Lowe)	81.6	5.8	116
18	National Hybrid 131	76.9	8.2	116
19	Illinois Hybrid 960 (Holmes)	76.4	9.0	114
20	Iowealth Hybrid 53	73.9	10.3	114
21	Iowealth Hybrid 50	72.9	11.2	113
22	Funk Hybrid G244	70.0	13.6	111
23	Illini Hybrid 211	78.4	9.7	110
24	Bear Hybrid OK-4	76.1	11.0	110
25	DeKalb Hybrid 871	70.0	14.3	110
26	Pioneer Hi-Bred 312	77.4	11.0	109
27	Tiemann Tested Hybrid 613	83.5	10.0	104
28	National Hybrid 119$_2$	75.2	14.8	103
29	Pioneer Hi-Bred 307	85.8	9.6	103
30	DeKalb Hybrid 690	82.9	13.6	98
31	Iowealth Hybrid CI	84.7	13.1	97
32	Funk Hybrid G244T	76.7	17.2	97
33	Illinois Hybrid 546 (McKeighan)	87.1	12.8	96
34	Funk Hybrid G102	80.7	16.0	96
35	Iowealth Hybrid AQ	83.0	15.2	95
36	Illinois Hybrid 753 (Sibley)	84.7	14.5	95
37	Bear Hybrid OK-35	82.8	15.6	95
38	Pioneer Hi-Bred 313	87.3	13.4	95
39	Illinois Hybrid 588 (Sibley)	84.3	15.0	94
40	Pioneer Hi-Bred 304	88.0	13.9	93
41	Pfister-Stiegelmeier Hybrid 360A	85.6	15.1	93
42	Tiemann Tested Hybrid 221	86.4	15.3	92
43	DeKalb Hybrid 628	83.7	16.6	92
44	Bear Hybrid OK-38	85.9	15.6	92
45	Funk Hybrid G33	83.2	17.0	92
46	Pfister-Stiegelmeier Hybrid 260	87.8	15.4	91
47	Funk Hybrid G212	83.3	18.3	90
48	U. S. Hybrid 44 (Moews)	82.8	18.7	90
49	Pioneer Hi-Bred 305A	90.7	15.8	88
50	Pfister-Stiegelmeier Hybrid 360	90.5	16.0	88
51	Pioneer Hi-Bred 302	86.3	18.5	88
52	Pioneer Hi-Bred 317	88.8	18.5	86
53	Pfister-Stiegelmeier Hybrid 160	91.1	17.9	85
54	Pfister-Stiegelmeier Hybrid 366	88.5	19.9	84
55	Iowealth Hybrid 22	90.8	21.0	81
56	Station Yellow Dent	96.0	31.3	68
57	McKeighan Yellow Dent	92.3	33.3	68
58	Doubet Yellow Dent	97.7	31.5	67
59	Mountjoy Utility Dent	97.0	35.2	65
60	Sommer Yellow Dent	96.9	43.7	59
	Average of all entries	80.6	13.7	100

[1]Southern corn rootworm, *Diabrotica duodecimpunctata* Fab. See also text, pages 231 and 232.
[2]Average resistance of all entries = 100. High rating indicates increased standing ability.

Table 9B.—TWO- AND THREE-YEAR SUMMARIES, WEST-CENTRAL: Littleton

Rank	Entry	Acre-yield		Damaged corn in sbelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	Average yield of entries grown in 1936, 1937, 1938								
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Illinois Hybrid 960	70.8	70.1	1.10	17.4	68.3	109.1	113.2	112.2
2	Funk Hybrid G212	69.1	68.4	1.17	17.1	69.7	111.3	110.5	110.7
3	[1]Pfister-Stiegelmeier Hybrid 360	67.2	66.4	1.40	17.2	66.3	105.9	107.3	107.0
4	[1]Pfister-Stiegelmeier Hybrid 360A	65.6	64.7	1.35	16.7	67.4	107.7	104.5	105.3
5	Funk Hybrid G244	65.1	64.5	1.09	17.7	67.1	107.2	104.2	105.0
6	Illinois Hybrid 546	62.6	61.5	2.30	18.2	73.7	117.7	99.4	104.0
7	Illinois Hybrid 753 (Sibley Estate)	64.4	63.7	1.35	19.1	61.8	98.7	102.9	101.9
8	Station Yellow Dent	55.2	54.2	2.30	19.3	52.8	84.3	87.6	86.8
●	**Average of 5 open-pollinated varieties**	**53.8**	**53.2**	**1.42**	**19.1**	**51.0**	**81.5**	**85.9**	**84.8**
9	Mountjoy Utility Dent	52.7	52.4	1.17	18.9	48.3	77.2	84.7	82.8
	Average of all entries	62.7	61.9	1.47	18.1	62.6	....	....	....
	Average yield of entries grown in 1937 and 1938								
1	Funk Hybrid G53	81.9	81.0	1.50	16.3	71.5	131.9	104.1	111.1
2	Funk Hybrid G212	85.9	85.3	.81	17.3	62.3	115.0	109.6	111.0
3	DeKalb Hybrid 628	87.3	86.9	.59	16.7	58.5	108.0	111.6	110.7
4	Illinois Hybrid 960 (Holmes)	84.4	83.8	.89	17.7	61.3	113.1	107.7	109.1
5	U. S. Hybrid 44 (Moews)	85.7	84.6	1.51	17.1	58.5	108.0	108.7	108.5
6	Illinois Hybrid 546 (McKeigban)	81.9	80.8	1.57	18.2	65.5	120.9	103.8	108.1
7	Pfister-Stiegelmeier Hybrid 360	85.2	84.4	1.10	16.4	57.0	105.2	108.4	107.6
8	Pioneer Hi-Bred 307	84.1	83.1	1.33	17.6	57.3	105.7	106.8	106.5
9	Pfister-Stiegelmeier Hybrid 360A	82.9	82.2	1.03	17.6	55.8	103.0	105.6	105.0
10	Funk Hybrid G244	78.8	78.3	.78	18.4	62.8	115.9	100.6	104.4
11	Funk Hybrid G33	82.0	81.3	1.02	17.4	54.0	99.7	104.4	103.2
12	Pioneer Hi-Bred 312	78.3	77.6	1.00	18.6	58.5	108.0	99.7	101.8
13	Funk Hybrid G244T	81.7	81.3	.49	18.0	50.0	92.3	104.4	101.4
14	DeKalb Hybrid 871	78.5	77.7	1.32	18.4	57.0	105.7	99.8	101.2
15	Pfister-Stiegelmeier Hybrid 366	79.3	78.6	1.00	16.7	55.0	101.5	101.0	101.1
16	Pioneer Hi-Bred 317	78.1	77.0	2.13	16.8	55.8	103.0	98.9	99.9
17	Illinois Hybrid 588 (Sibley Estate)	75.3	74.6	1.01	19.4	55.0	101.5	95.8	97.2
18	Illinois Hybrid 753 (Sibley Estate)	75.5	74.8	1.14	19.0	51.0	94.1	96.1	95.6
19	Pioneer Hi-Bred 305A	67.1	66.3	1.44	18.9	51.8	95.6	85.2	87.8
20	Station Yellow Dent	69.6	68.5	1.97	19.4	42.8	79.0	88.0	85.8
21	McKeighan Yellow Dent	68.9	68.8	.40	19.3	39.3	72.5	88.4	84.4
●	**Average of 5 open-pollinated varieties**	**68.8**	**68.2**	**.90**	**19.5**	**40.3**	**74.4**	**87.7**	**84.4**
22	Doubet Yellow Dent	66.0	65.6	.73	19.4	42.5	78.4	84.3	82.8
23	Mountjoy Utility Dent	67.7	67.4	.57	19.5	37.0	68.3	86.6	82.0
	Average of all entries	78.1	77.8	1.09	18.1	54.2	....	....	....
	[2]Pfister-Stiegelmeier Hybrid 260	77.8	77.5	.57	17.3	60.5	....	....	....

[1]Entered as Illinois bybrids in 1936. [2]Entered in Stanford field in 1937.

Table 10.—EAST-CENTRAL ILLINOIS: Paxton

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1938	*bu.*	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	*Bear Hybrid OK-60	59.9	59.0	1.51	13.2	86	107.5	122.7	118.9
2	U. S. Hybrid 44 (Moews)	60.7	57.3	5.57	13.8	89.5	111.9	119.1	117.3
3	Moews Hybrid 10	58.1	57.7	.64	12.9	86	107.5	120.0	116.9
4	†Pioneer Hi-Bred 313	61.1	60.1	1.65	14.0	73.5	91.9	124.9	116.7
5	*M-L Hybrid 524 (Moews-Lowe)	58.0	57.2	1.35	13.6	81.5	101.9	118.9	114.7
6	Illinois Hybrid 960 (Holmes)	57.7	56.5	2.00	13.2	82	102.5	117.5	113.8
7	*U. S. Hybrid 13 (Illini)	55.1	54.5	1.17	15.2	89.5	111.9	113.3	113.0
8	Funk Hybrid G94	55.4	54.2	2.20	15.6	90	112.5	112.7	112.7
9	Pioneer Hi-Bred 317	56.7	55.7	1.81	13.3	82	102.5	115.8	112.5
10	Ill. Hybrid 588 (Sibley Estate)	55.1	54.6	.92	14.0	81.5	101.9	113.5	110.6
11	Pioneer Hi-Bred 307	56.0	53.1	5.16	12.5	85.5	106.9	110.4	109.5
12	†Funk Hybrid G33	54.3	54.3	.09	14.0	77.5	96.9	112.9	108.9
13	Pfister-Stiegelmeier Hybrid 160	53.2	51.8	2.71	15.2	87	108.8	107.7	108.0
14	Funk Hybrid G65	54.0	52.0	3.70	12.1	85	106.2	108.1	107.6
15	*Bear Hybrid OK-30	52.7	52.6	.20	14.0	80.5	100.6	109.4	107.2
15	*Pioneer Hi-Bred 302	52.4	52.0	.80	14.1	83.5	104.4	108.1	107.2
17	*†Crow Hybrid 804	54.2	53.7	.86	14.0	70	87.5	111.6	105.6
18	Iowealth Hybrid AQ	50.8	49.4	2.74	12.7	87.5	109.4	102.7	104.4
19	National Hybrid 130	49.9	49.7	.45	13.1	85.5	106.9	103.3	104.2
20	Funk Hybrid G62	51.2	50.2	2.04	13.3	82.5	103.1	104.4	104.1
21	†DeKalb Hybrid 870	52.2	51.7	1.03	12.3	74	92.5	107.5	103.8
21	†Iowealth Hybrid 53	51.5	50.6	1.66	13.1	79.5	99.4	105.2	103.8
21	*Pioneer Hi-Bred 318	50.1	50.1	.08	11.6	82	102.5	104.2	103.8
24	*†Illini Hybrid 211	52.1	51.4	1.33	13.3	75	93.8	106.9	103.6
25	Funk Hybrid G53	49.8	48.8	1.97	12.9	86	107.5	101.5	103.0
26	Pfister-Stiegelmeier Hybrid 378	48.5	48.2	.59	12.3	87.5	109.4	100.2	102.5
27	Pfister-Stiegelmeier Hybrid 90	50.3	49.9	.76	12.9	77.5	96.9	103.7	102.0
28	Pfister-Stiegelmeier Hybrid 380	49.5	48.7	1.52	14.3	83	103.8	101.2	101.9
29	*M-L Hybrid 120 (Moews-Lowe)	48.2	47.7	.95	12.5	87.5	109.4	99.2	101.8
30	Ill. Hybrid 753 (Sibley Estate)	48.9	48.6	.64	15.6	83	103.8	101.0	101.7
31	*†Pioneer Hi-Bred 305A	51.9	50.8	2.19	16.2	67.5	84.4	105.6	100.3
32	*Illini Hybrid 222	48.3	47.8	1.06	12.8	82	102.5	99.4	100.2
33	*Tiemann Tested Hybrid 613	47.7	47.0	1.38	12.9	84.5	105.6	97.7	99.7
34	†Funk Hybrid G212	49.9	48.8	2.20	12.6	75	93.8	101.5	99.6
35	Funk Hybrid G32	47.7	47.0	1.37	13.3	82	102.5	97.7	98.9
36	Funk Hybrid G244	46.9	46.6	.67	13.0	82.5	103.1	96.9	98.5
37	*P. S. M. Hybrid 370 (Mittendorf)	47.8	47.4	.88	13.6	78	97.5	98.5	98.3
38	*†Pioneer Hi-Bred 312	48.8	47.4	2.78	13.8	77.5	96.9	98.5	98.1
38	*DeKalb Hybrid 903 (W)	47.7	47.3	.90	15.2	78	97.5	98.3	98.1
40	*Illini Hybrid 233	46.3	46.2	.22	13.8	83	103.8	96.0	98.0
41	*Crow Hybrid 608	46.6	46.0	1.35	14.1	82.5	103.1	95.6	97.5
42	*DeKalb Hybrid 825	47.6	45.9	3.64	14.0	82	102.5	95.4	97.2
43	Pfister-Stiegelmeier Hybrid 365	47.2	44.2	6.32	13.2	84	105.0	91.9	95.2
44	*†Crow Hybrid 603	45.8	45.8	.09	12.1	75	93.8	95.2	94.9
45	Iowealth Hybrid 52	44.7	44.4	.66	15.2	81.5	101.9	92.3	94.7
46	*†Crow Hybrid 640	46.2	45.9	.75	13.6	73	91.3	95.4	94.4
47	†National Hybrid 124	45.0	44.3	1.64	12.3	76.5	95.6	92.1	93.0
48	†Iowealth Hybrid CI	43.9	43.0	2.00	14.0	78.5	98.1	89.4	91.6
49	†National Hybrid 125E	43.6	42.9	1.70	12.9	76	95.0	89.2	90.7
50	*†U. S. Hybrid 5 (Mountjoy)	43.9	43.3	1.46	12.6	72.5	90.6	90.0	90.2
51	*DeKalb Hybrid 907 (W)	40.1	39.8	.78	15.0	81.5	101.9	82.7	87.5
52	*DeKalb Hybrid 915 (W)	38.3	38.2	.28	15.8	88	110.0	79.4	87.1
53	*DeKalb Hybrid 701 (W)	39.5	39.0	1.26	15.4	83	103.8	81.1	86.8
54	*DeKalb Hybrid 702 (W)	38.8	38.6	.60	15.0	80.5	100.6	80.2	85.3
55	Sommer Yellow Dent	40.8	40.7	.21	14.9	66.5	83.1	84.6	84.2
56	†McKeighan Yellow Dent	40.9	40.8	.27	15.0	65.5	81.9	84.8	84.1
57	†Station Yellow Dent	39.5	39.0	1.29	15.9	73.5	91.9	81.1	83.8
58	Doubet Yellow Dent	36.2	35.5	1.90	14.2	81.5	101.9	73.8	80.8
59	*†Pioneer Hi-Bred 304	39.4	38.1	3.34	15.2	68	85.0	79.2	80.7
	● Average of 5 open-pollinated varieties	**38.3**	**37.6**	**1.99**	**14.9**	**69.4**	**86.8**	**78.2**	**80.3**
60	†Mountjoy Utility Dent	34.3	32.1	6.30	14.3	60	75.0	66.7	68.8
	Average of all entries	48.9	48.1	1.63	13.8	80	....	....	....

*Less than 5 bushels of seed sampled. †Average of 9 plots instead of 10.

Less than 6.8 bushels difference between total yields of any two entries in this table is not considered significant.

Table 10A.—TWO- AND THREE-YEAR SUMMARIES, EAST-CENTRAL: Paxton

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	Average yield of entries grown in 1936, 1937, 1938								
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Illinois Hybrid 960	69.7	68.9	1.27	16.3	79.8	108.7	115.8	114.0
2	Moews Hybrid 10	66.8	66.1	1.27	15.6	86.9	118.4	111.1	112.9
3	Funk Hybrid G212	64.8	63.9	1.58	15.7	78.5	106.9	107.4	107.3
4	Funk Hybrid G244	63.6	63.1	.92	16.2	78.3	106.7	106.1	106.3
5	Illinois Hybrid 753 (Sibley Estate)	62.7	62.2	1.02	17.9	76.8	104.6	104.5	104.5
6	Station Yellow Dent	52.4	51.8	1.56	18.4	65.9	89.8	87.1	87.8
	● Average of 5 open-pollinated varieties	**51.7**	**51.2**	**1.63**	**17.7**	**63.3**	**86.2**	**86.1**	**86.1**
7	Mountjoy Utility Dent	50.0	49.0	3.00	17.0	57.7	78.6	82.4	81.5
	Average of all entries	60.2	59.5	1.53	16.9	73.4	....	....	....
	Average yield of entries grown in 1937 and 1938								
1	Pioneer Hi-Bred 317	68.1	67.3	1.30	14.9	87.3	106.3	110.7	109.6
2	Illinois Hybrid 960 (Holmes)	68.5	67.7	1.19	14.7	85.5	104.1	111.3	109.5
3	U. S. Hybrid 44 (Moews)	67.8	66.0	2.94	15.3	90.3	110.0	108.6	109.0
4	Moews Hybrid 10	66.0	65.7	.43	14.4	89.5	109.0	108.1	108.3
5	Funk Hybrid G33	66.5	66.5	.05	15.1	84.3	102.7	109.4	107.7
6	Pioneer Hi-Bred 307	66.3	64.9	2.59	13.9	89.0	108.4	106.7	107.1
7	DeKalb Hybrid 870	66.8	66.5	.66	14.1	80.0	97.4	109.4	106.4
7	Illinois Hybrid 588 (Sibley Estate)	66.3	66.0	.51	15.2	81.8	99.6	108.6	106.4
9	Funk Hybrid G62	63.4	62.8	1.15	15.8	85.0	103.5	103.3	103.4
10	Pioneer Hi-Bred 312	64.2	63.5	1.39	15.0	81.8	99.6	104.4	103.2
11	Illinois Hybrid 753 (Sibley Estate)	62.9	62.7	.48	16.5	84.5	102.9	103.1	103.1
12	Funk Hybrid G53	62.5	62.0	1.04	14.5	86.5	105.4	102.0	102.9
13	Funk Hybrid G65	62.8	61.8	1.85	14.1	86.8	105.7	101.6	102.6
14	Funk Hybrid G212	63.1	62.4	1.33	14.4	83.0	101.1	102.6	102.2
14	Pfister-Stiegelmeier Hybrid 380	61.8	61.4	.76	14.7	86.8	105.7	101.0	102.2
16	Funk Hybrid G244	60.1	60.0	.39	14.1	85.5	104.1	98.7	100.1
17	DeKalb Hybrid 825	58.8	57.9	1.90	16.1	85.0	103.5	95.2	97.3
18	National Hybrid 124	57.9	57.3	1.26	14.6	82.5	100.5	94.2	95.8
19	Pioneer Hi-Bred 305A	58.7	58.0	1.33	17.7	74.8	91.1	95.4	94.3
20	McKeighan Yellow Dent	53.8	53.7	.14	16.7	72.5	88.3	88.3	88.3
21	Station Yellow Dent	53.1	52.9	.65	17.3	73.5	89.5	87.0	87.6
	● Average of 5 open-pollinated varieties	**52.6**	**52.2**	**1.01**	**16.5**	**71.8**	**87.5**	**85.9**	**86.3**
22	Doubet Yellow Dent	49.8	49.4	.95	16.1	76.8	93.5	81.3	84.4
23	Mountjoy Utility Dent	51.5	50.4	3.23	15.4	65.0	79.2	82.9	82.0
	Average of all entries	61.4	60.8	1.19	15.3	82.1	....	....	....
	[1]Pfister-Stiegelmeier Hybrid 90	80.6	80.4	.38	14.5	74.8	....	....	....

[1]Entered in Stanford field in 1937.

Table 11.—SOUTH-CENTRAL ILLINOIS: Sullivan

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		[1]Total	Sound				Erect plants	Sound yield	General perform.
	1938	*bu.*	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Illinois Hybrid 784 (Illini)	83.6	80.3	3.94	20.0	73	119.5	121.5	121.0
2	*DeKalb Hybrid 825	77.4	77.4	.02	16.6	75.5	123.6	117.1	118.7
3	*Illini Hybrid 211	76.8	76.7	.14	16.4	77	126.0	116.0	118.5
4	Funk Hybrid G125	78.0	76.1	2.50	17.5	75	122.8	115.1	117.0
5	*Bear Hybrid OK-30	77.6	77.4	.26	16.3	71	116.2	117.1	116.9
6	*Bear Hybrid OK-60	76.1	76.0	.18	16.3	69	112.9	114.9	114.4
7	*Funk Hybrid G95	78.4	77.0	1.85	18.2	60.5	99.0	116.5	112.1
7	*DeKalb Hybrid 918 (W)	72.0	71.9	.13	18.7	74.5	122.0	108.8	112.1
9	Pioneer Hi-Bred 307	75.1	74.3	1.15	16.6	66.5	108.9	112.4	111.5
10	Funk Hybrid G94	72.1	71.7	.61	16.8	73.5	120.3	108.4	111.4
11	U. S. Hybrid 35 (Illini)	71.6	71.5	.13	15.0	73.5	120.3	108.1	111.2
12	*Illini Hybrid 233	71.9	71.6	.46	15.6	73	119.5	108.3	111.1
13	*Iowealth Hybrid 30	74.4	74.2	.15	17.4	65	106.4	112.2	110.8
14	Pioneer Hi-Bred 313	81.3	81.2	.16	18.9	45	73.7	122.8	110.5
15	Pfister-Stiegelmeier Hybrid 380	74.3	72.3	2.64	15.5	66.5	108.9	109.3	109.2
16	Bunning White Dent	74.1	73.8	.45	17.4	60.5	99.0	111.6	108.5
17	Funk Hybrid G46	73.4	70.4	4.05	18.6	67	109.6	106.5	107.3
18	*Illini Hybrid 222	70.8	68.7	3.07	15.8	71.5	117.0	103.9	107.2
19	DeKalb Hybrid 823	68.5	68.2	.38	15.6	71.5	117.0	103.1	106.6
20	Canterbury Yellow Dent	70.1	69.9	.23	19.2	66	108.0	105.7	106.3
21	Funk Hybrid G49	71.1	70.4	.96	15.6	63	103.1	106.5	105.7
22	*DeKalb Hybrid 832	67.9	67.8	.22	19.5	69	112.9	102.5	105.1
23	DeKalb Hybrid 817	72.5	70.5	2.79	16.8	59	96.6	106.6	104.1
24	Funk Hybrid G235	67.7	66.9	1.18	16.8	66.5	108.9	101.2	103.1
24	*Crow Hybrid 608	66.3	66.3	.07	17.2	68	111.3	100.3	103.1
26	Wilson Yellow Dent	68.8	66.2	3.85	18.6	67.5	110.5	100.1	102.7
27	Pfister-Stiegelmeier Hybrid 360	69.6	69.4	.26	16.1	58	94.9	105.0	102.5
28	DeKalb Hybrid 827	67.2	65.2	2.93	14.3	69.5	113.8	98.6	102.4
29	*DeKalb Hybrid 915 (W)	66.1	65.1	1.44	17.6	68.5	112.1	98.5	101.9
	● Average of 5 open-pollinated varieties	**67.6**	**66.8**	**1.16**	**18.0**	**63.7**	**104.3**	**101.1**	**101.9**
30	Funk Hybrid G56	68.7	68.4	.50	18.2	59	96.6	103.5	101.8
31	*Crow Hybrid 603	66.7	66.2	.72	15.0	65	106.4	100.1	101.7
31	*Pioneer Hi-Bred 305A	65.4	64.4	1.47	17.7	70	114.6	97.4	101.7
33	*National Hybrid 132	69.7	69.2	.65	19.3	56	91.7	104.7	101.4
34	*Bear Hybrid OK-35	68.8	68.3	.70	16.1	56	91.7	103.3	100.4
35	DeKalb Hybrid 821B	67.6	66.0	2.38	16.6	62	101.5	99.8	100.2
36	*Crow Hybrid 701W	65.7	65.1	.87	17.7	64	104.8	98.5	100.1
37	Illinois Hybrid 947 (Illini)	65.1	64.8	.43	17.7	64	104.8	98.0	99.7
38	*Illinois Hybrid 863 (Illini)	65.8	63.9	2.86	18.4	66	108.0	96.7	99.5
39	Rice White Dent	66.9	66.2	1.00	17.4	58.5	95.8	100.1	99.1
40	*Crow Hybrid 804	68.3	67.0	1.93	17.0	55	90.0	101.3	98.5
41	*Funk Hybrid G85	64.4	63.9	.79	17.4	59	96.6	96.6	96.6
42	*Tiemann Tested Hybrid 800	68.0	65.6	3.59	15.8	52	85.1	99.2	95.7
43	*Funk Hybrid G92	63.7	62.0	2.61	17.4	60.5	99.0	93.8	95.1
44	Pfister-Stiegelmeier Hybrid 365	67.7	67.3	.62	16.2	43.5	71.2	101.8	94.2
45	National Hybrid 119$_2$	62.3	61.8	.85	15.5	58	94.9	93.5	93.9
46	Shuman Golden Beauty	58.2	58.1	.25	17.5	66	108.0	87.9	92.9
47	Pfister-Stiegelmeier Hybrid 360A	64.3	62.6	2.69	16.4	51.5	84.3	94.7	92.1
48	Pioneer Hi-Bred 317	60.4	59.2	2.00	15.6	58	94.9	89.5	90.9
49	*Funk Hybrid G50	61.2	60.8	.62	17.4	51	83.5	91.9	89.8
49	*Pioneer Hi-Bred 312	57.4	56.8	1.09	16.1	62	101.5	85.9	89.8
51	Funk Hybrid G244T	62.8	61.9	1.41	16.4	46	75.3	93.6	89.0
52	National Hybrid 131	57.3	57.2	.17	14.0	50	81.8	86.5	85.3
53	*Iowealth Hybrid 22	57.5	56.9	.99	15.5	46	75.3	86.1	83.4
54	Iowealth Hybrid 50	54.8	51.8	5.45	15.6	48	78.6	78.3	78.4
55	Iowealth Hybrid 53	50.8	50.2	1.15	14.8	50.5	82.7	75.9	77.6
56	Illinois Hybrid 960 (Holmes)	53.7	53.5	.40	15.8	41	67.1	80.9	77.5
57	Pfister-Stiegelmeier Hybrid 160	49.3	49.3	.02	17.0	51	83.5	74.6	76.8
58	DeKalb Hybrid 870	52.4	52.0	.70	15.8	40	65.5	78.6	75.3
59	Funk Hybrid G244	48.7	48.5	.49	16.3	48	78.6	73.4	74.7
60	National Hybrid 130	50.1	49.4	1.38	15.7	44	72.0	74.7	74.0
	Average of all entries	67.0	66.1	1.28	16.8	61.1	....	....	....

*Less than 5 bushels of seed sampled.

Less than 5.4 bushels difference between total yields of any two entries in this table is not considered significant.

Table 11A.—RESISTANCE TO LODGING: South-Central, Sullivan
Lodging caused by feeding of southern corn rootworm[1]

Rank	Entry	Plants leaning 30 degrees or more	Plants leaning more than 45 degrees	Resistance rating compared with average[2]
	1938	*perct.*	*perct.*	
1	Funk Hybrid G94	2.7	0	814
2	Funk Hybrid G125	1.0	1.0	760
3	DeKalb Hybrid 825	1.5	1.0	633
4	Pioneer Hi-Bred 305A	2.3	1.1	496
5	Illini Hybrid 233	4.8	.5	393
6	Funk Hybrid G49	5.9	0	380
7	DeKalb Hybrid 821B	5.3	.5	356
8	DeKalb Hybrid 817	4.2	1.1	345
9	Crow Hybrid 603	3.7	1.6	326
10	DeKalb Hybrid 832	5.0	1.7	271
11	Illinois Hybrid 960 (Holmes)	6.4	1.1	265
12	DeKalb Hybrid 827	5.5	2.0	238
13	Illinois Hybrid 784 (Illini)	5.3	2.1	238
14	Illini Hybrid 211	7.0	2.2	200
15	Illini Hybrid 222	7.7	2.2	187
16	Pfister-Stiegelmeier Hybrid 160	6.4	2.9	187
17	Pfister-Stiegelmeier Hybrid 380	8.5	2.1	178
18	Illinois Hybrid 947 (Illini)	8.4	2.2	178
19	Bear Hybrid OK-60	9.0	2.1	173
20	Funk Hybrid G85	7.6	3.0	168
21	Crow Hybrid 804	10.5	2.0	156
22	U. S. Hybrid 35 (Illini)	6.5	4.0	156
23	DeKalb Hybrid 823	9.5	2.6	154
24	Crow Hybrid 608	5.9	4.7	148
25	Pioneer Hi-Bred 313	7.5	4.3	141
26	Funk Hybrid G46	10.9	2.7	139
27	National Hybrid 130	11.2	2.8	136
28	Funk Hybrid G50	7.3	4.7	136
29	DeKalb Hybrid 918 (W)	12.1	2.7	130
30	Bear Hybrid OK-30	10.1	3.7	130
31	DeKalb Hybrid 870	11.0	4.4	115
32	Funk Hybrid G92	13.0	3.8	111
33	Pioneer Hi-Bred 317	9.5	5.6	110
34	Bear Hybrid OK-35	14.8	3.2	108
35	Tiemann Tested Hybrid 800	10.3	5.4	108
36	Pfister-Stiegelmeier Hybrid 360A	12.1	5.5	98
37	Pioneer Hi-Bred 307	13.1	5.6	93
38	Iowealth Hybrid 53	12.7	5.8	93
39	DeKalb Hybrid 915 (W)	16.4	4.5	90
40	Pioneer Hi-Bred 312	12.9	6.4	88
41	Funk Hybrid G56	14.7	5.8	86
42	Funk Hybrid G235	13.6	6.6	85
43	Illinois Hybrid 863 (Illini)	13.4	6.7	85
44	Funk Hybrid G244	12.8	7.3	83
45	National Hybrid 119$_2$	14.8	8.3	73
46	Crow Hybrid 701W	16.9	7.4	72
47	Pfister-Stiegelmeier Hybrid 365	17.4	7.4	71
48	Iowealth Hybrid 30	22.3	6.4	65
49	Funk Hybrid G244T	18.1	9.3	62
50	Iowealth Hybrid 50	17.0	11.0	58
51	Pfister-Stiegelmeier Hybrid 360	22.3	9.3	56
52	Funk Hybrid G95	20.0	10.2	56
53	Iowealth Hybrid 22	22.1	11.0	52
54	Bunning White Dent	27.2	9.9	49
55	National Hybrid 132	28.3	10.7	46
56	Rice White Dent	23.9	12.8	46
57	National Hybrid 131	23.9	13.0	46
58	Wilson Yellow Dent	28.3	11.0	45
59	Canterbury Yellow Dent	33.5	14.0	37
60	Shuman Golden Beauty	29.2	16.9	36
	Average of all entries	12.4	5.2	100

[1]Southern corn rootworm, *Diabrotica duodecimpunctata* Fab. See also text, pages 231 and 232.
[2]Average resistance of all entries = 100. High rating indicates increased standing ability.

Table 11B.—TWO- AND THREE-YEAR SUMMARIES, SOUTH-CENTRAL: Sullivan

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	Average yield of entries grown in 1936, 1937, 1938								
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Funk Hybrid G235	70.3	69.6	1.55	17.2	65.9	114.8	103.4	106.3
2	Illinois Hybrid 960	69.0	68.7	.64	16.3	53.4	93.0	102.1	99.8
3	Bunning White Dent	66.9	66.3	1.94	18.7	57.5	100.2	98.5	98.9
4	Funk Hybrid G244	66.4	66.2	.52	17.1	54.9	95.6	98.4	97.7
5	Rice White Dent	66.2	65.6	1.34	18.8	55.1	96.0	97.5	97.1
	● Average of 5 open-pollinated varieties	**63.7**	**63.0**	**1.66**	**19.2**	**57.1**	**99.5**	**93.6**	**95.1**
	Average of all entries	67.8	67.3	1.20	17.6	57.4	....	....	....
	Average yield of entries grown in 1937 and 1938								
1	DeKalb Hybrid 825	90.5	90.3	.21	18.4	83.6	125.9	102.0	108.0
2	Funk Hybrid G49	94.9	94.4	.62	16.6	73.2	110.2	106.7	107.6
3	Funk Hybrid G46	93.1	91.4	2.16	19.1	75.0	113.0	103.3	105.7
4	Pfister-Stiegelmeier Hybrid 380	91.6	90.3	1.56	16.5	75.8	114.2	102.0	105.1
5	Funk Hybrid G56	94.0	93.7	.33	18.9	67.6	101.8	105.9	104.9
6	Illinois Hybrid 863	92.0	90.8	1.69	19.2	74.0	111.4	102.6	104.8
7	Pfister-Stiegelmeier Hybrid 360	91.7	91.3	.41	17.1	70.7	106.5	103.2	104.0
7	Funk Hybrid G235	91.2	90.8	.62	17.7	71.9	108.3	102.6	104.0
9	Funk Hybrid G244T	92.7	92.1	.83	16.9	64.7	97.4	104.1	102.4
10	Pfister-Stiegelmeier Hybrid 360A	90.5	89.5	1.44	16.9	67.7	102.0	101.1	101.3
11	Bunning White Dent	93.0	92.8	.28	17.8	56.1	84.5	104.9	99.8
12	Funk Hybrid G50	87.4	86.9	.51	18.3	63.3	95.3	98.2	97.5
13	DeKalb Hybrid 870	86.5	86.2	.48	16.8	62.0	93.4	97.4	96.4
14	Funk Hybrid G244	84.1	83.7	.45	17.1	66.2	99.7	94.6	95.9
15	Illinois Hybrid 947	82.5	82.1	.49	18.3	69.2	104.2	92.8	95.7
16	Illinois Hybrid 960 (Holmes)	86.5	86.2	.34	16.7	58.3	87.8	97.4	95.0
17	Rice White Dent	88.8	88.4	.50	18.8	52.6	79.2	99.9	94.7
	● Average of 5 open-pollinated varieties	**86.0**	**85.6**	**.66**	**18.9**	**55.3**	**83.3**	**96.7**	**93.4**
18	Shuman Golden Beauty	74.2	74.2	.13	19.5	55.0	82.8	83.8	83.6
	Average of all entries	89.0	88.5	.72	17.9	66.4	....	....	....

Table 12A.—TWO-YEAR SUMMARY, SOUTHERN ILLINOIS: Shobonier

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	Average yield of entries grown in 1937 and 1938								
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	St. Charles White	35.6	35.2	.61	17.4	41.3	90.6	127.5	118.3
2	Funk Hybrid G90	30.6	30.5	.29	13.6	53.5	117.3	110.5	112.2
3	DeKalb Hybrid 907 (W)	30.1	30.0	.20	16.4	54.0	118.4	108.7	111.1
4	Waddell Utility White Dent	32.0	31.9	.26	14.8	43.8	96.1	115.6	110.7
5	Champion White Pearl	31.0	30.8	.30	18.6	43.3	95.0	111.6	107.5
6	Funk Hybrid G49	29.9	29.6	.64	14.4	49.0	107.5	107.2	107.3
7	Illinois Hybrid 863	29.8	29.5	.56	15.2	48.0	105.3	106.9	106.5
8	DeKalb Hybrid 915 (W)	28.5	28.3	.50	14.7	52.5	115.1	102.5	105.7
	● Average of 5 open-pollinated varieties	**30.7**	**30.6**	**.26**	**17.2**	**39.4**	**86.4**	**110.9**	**104.8**
9	Funk Hybrid G56	26.7	26.6	.39	12.5	50.8	111.4	96.4	100.2
10	Blackhawk	29.7	29.7	.02	18.8	31.8	69.7	107.6	98.1
11	Funk Hybrid G95	24.4	24.4	.23	13.5	52.5	115.1	88.4	95.1
12	Funk Hybrid G92	25.9	25.8	.39	13.9	42.3	92.8	93.5	93.3
13	DeKalb Hybrid 870	24.6	24.6	.29	13.3	47.5	104.2	89.1	92.9
14	DeKalb Hybrid 871	22.5	22.5	.34	12.7	46.8	102.6	81.5	86.8
15	Funk Hybrid G62	23.8	23.6	.52	12.6	37.8	82.9	85.5	84.9
16	Funk Hybrid G244	23.2	23.1	.33	13.2	40.0	87.7	83.7	84.7
17	Pfister-Stiegelmeier Hybrid 360A	20.1	20.0	.52	12.8	45.8	100.4	72.5	79.5
	Average of all entries	27.7	27.6	.37	14.8	45.6	....	....	....

Table 12.—SOUTHERN ILLINOIS: Shobonier

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1938	*bu.*	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Illinois Hybrid 784 (Illini)	53.1	53.0	.12	18.9	67	114.4	133.5	128.7
2	St. Charles White (Isenberg)	53.7	53.0	1.22	15.6	59	100.7	133.5	125.3
3	Champion White Pearl	48.8	48.5	.56	17.4	57.5	98.1	122.2	116.2
3	Funk Hybrid G125	46.1	46.0	.25	14.3	68.5	116.9	115.9	116.2
●	**Average of 5 open-pollinated varieties**	**48.4**	**48.1**	**.48**	**16.2**	**56.4**	**96.3**	**121.2**	**115.0**
5	Waddell Utility White Dent	47.5	47.3	.45	14.3	58	99.0	119.1	114.1
6	Funk Hybrid G90	44.8	44.6	.45	11.9	66	112.6	112.3	112.4
7	*Illinois Hybrid 863 (Illini)	46.4	45.9	1.04	13.8	60	102.4	115.6	112.3
7	*DeKalb Hybrid 832	44.6	44.3	.70	15.0	67	114.4	111.6	112.3
7	*DeKalb Hybrid 922 (W)	44.4	44.3	.36	14.9	67	114.4	111.6	112.3
10	Illinois Hybrid 877 (Illini)	46.2	45.8	.69	12.3	60	102.4	115.4	112.2
11	*DeKalb Hybrid 915 (W)	44.7	44.3	1.00	14.5	66.5	113.5	111.6	112.1
12	DeKalb Hybrid 830	42.9	42.6	.66	15.0	70.5	120.3	107.3	110.6
13	Funk Hybrid G94	43.8	43.4	.97	10.6	66.5	113.5	109.3	110.4
14	*Pioneer Hi-Bred 305A	47.3	47.0	.66	14.5	50	85.3	118.4	110.1
15	Moore Yellow Dent	46.0	45.9	.18	15.3	54.5	93.0	115.6	110.0
16	Blackhawk (Kruetzberg)	45.9	45.9	.01	18.3	53	90.5	115.6	109.3
17	Funk Hybrid G46	45.1	45.0	.32	14.0	56.5	96.4	113.4	109.2
18	*National Hybrid 132	41.0	40.8	.53	12.9	73.5	125.5	102.8	108.5
19	Funk Hybrid G49	43.7	43.3	.82	11.9	61.5	105.0	109.1	108.1
20	*DeKalb Hybrid 907 (W)	42.8	42.6	.39	14.1	64	109.2	107.3	107.8
21	*DeKalb Hybrid 918 (W)	42.4	42.2	.39	13.1	65	110.9	106.3	107.5
22	DeKalb Hybrid 823	41.0	41.0	.06	12.0	68	116.1	103.3	106.5
23	*Iowealth Hybrid 30	40.9	40.8	.16	12.6	68	116.1	102.8	106.1
24	DeKalb Hybrid 828	41.1	41.0	.27	12.2	66.5	113.5	103.3	105.9
25	*Funk Hybrid G85	41.3	41.1	.42	11.7	63	107.5	103.5	104.5
26	DeKalb Hybrid 831	40.4	40.2	.60	12.6	64.5	110.1	101.3	103.5
27	*DeKalb Hybrid 917 (W)	40.3	39.8	1.30	17.4	59	100.7	100.3	100.4
28	DeKalb Hybrid 817	40.2	40.2	.07	11.7	56.5	96.4	101.3	100.1
29	Illini Hybrid 455	41.7	41.5	.43	12.1	49	83.6	104.5	99.3
30	DeKalb Hybrid 821B	39.8	39.7	.18	14.2	54.5	93.0	100.0	98.3
31	*Funk Hybrid G95	37.6	37.5	.20	12.1	61	104.1	94.5	96.9
31	*Iowealth Hybrid 27	36.6	36.5	.27	11.9	65.5	111.8	91.9	96.9
33	Funk Hybrid G56	37.6	37.4	.62	10.1	60.5	103.3	94.2	96.5
34	Iowealth Hybrid 53	37.0	36.9	.20	11.7	62.5	106.7	92.9	96.4
35	*Illini Hybrid 233	37.5	37.4	.22	10.7	60	102.4	94.2	96.3
36	Pioneer Hi-Bred 307	37.3	37.1	.52	10.6	60	102.4	93.5	95.7
37	*Funk Hybrid G92	37.8	37.6	.51	13.5	51.5	87.9	94.7	93.0
37	*Funk Hybrid G50	36.4	36.0	1.13	14.3	58.5	99.8	90.7	93.0
39	Iowealth Hybrid 50	37.6	37.6	.01	11.9	50	85.3	94.7	92.4
39	Pfister-Stiegelmeier Hybrid 160	35.0	34.7	.82	11.0	63	107.5	87.4	92.4
41	DeKalb Hybrid 827	36.7	36.6	.15	11.9	54	92.2	92.2	92.2
42	National Hybrid 131	33.9	33.8	.27	10.9	63	107.5	85.1	90.7
43	DeKalb Hybrid 870	35.4	35.3	.24	13.0	55	93.9	88.9	90.2
44	Funk Hybrid G62	36.5	36.3	.51	11.8	50	85.3	91.4	89.9
45	*Pioneer Hi-Bred 312	34.9	34.8	.38	11.2	56	95.6	87.7	89.7
46	*Illini Hybrid 222	34.9	34.6	.74	13.0	56	95.6	87.2	89.3
47	*Illini Hybrid 422	35.4	35.4	.08	14.1	50	85.3	89.2	88.2
48	*Mangelsdorf Hybrid XX #1	34.7	34.6	.40	11.5	52	88.8	87.2	87.6
49	DeKalb Hybrid 871	33.1	33.1	.14	11.0	54	92.2	83.4	85.6
50	Pfister-Stiegelmeier Hybrid 375R	32.2	32.1	.28	10.7	52.5	89.6	80.9	83.1
51	Pioneer Hi-Bred 313	33.3	33.2	.40	11.3	46	78.5	83.6	82.3
52	Funk Hybrid G244	33.3	33.2	.25	10.7	43.5	74.2	83.6	81.3
53	National Hybrid 130	32.0	31.9	.31	11.3	47.5	81.1	80.4	80.6
54	Pioneer Hi-Bred 317	28.3	28.1	.61	11.7	62	105.8	70.8	79.6
55	Pfister-Stiegelmeier Hybrid 360A	30.1	30.0	.30	10.6	50.5	86.2	75.6	78.3
56	Pfister-Stiegelmeier Hybrid 365	32.0	31.9	.24	10.9	36	61.4	80.4	75.7
	Average of all entries	39.9	39.7	.45	12.9	58.6	....	....	....

*Less than 5 bushels of seed sampled.

(See page 262 for two-year summary of results on this field.)

Less than 5.3 bushels difference between total yields of any two entries in this table is not considered significant.

Table 13.—SOUTHEASTERN ILLINOIS: Albion

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1938	*bu.*	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1*	†Funk Hybrid G528W	97.5	97.3	.22	13.0	81	91.8	120.2	113.1
2*	†DeKalb Hybrid 922 (W)	92.3	92.3	.05	16.0	91	103.1	114.0	111.3
3*	†DeKalb Hybrid 918 (W)	88.4	88.4	0	14.7	93	105.3	109.2	108.2
4*	†M-L Hybrid 850 (Moews-Lowe)	89.1	88.8	.35	13.1	89	100.8	109.7	107.5
5	†Illinois Hybrid 784 (Illini)	89.5	89.1	.42	16.8	88	99.7	110.0	107.4
6	†Funk Hybrid G125	90.4	89.2	1.28	12.1	87	98.6	110.2	107.3
6*	†Funk Hybrid G527W	89.8	88.7	1.18	14.0	89	100.8	109.5	107.3
8*	†Illini Hybrid 211	87.0	86.8	.20	12.9	91	103.1	107 2	106.2
8*	†DeKalb Hybrid 915 (W)	87.7	86.6	1.21	12.9	92	104.2	106.9	106.2
10*	†Funk Hybrid G86	86.3	86.2	.10	13.6	90	101.9	106.5	105.4
11	Pioneer Hi-Bred 313	86.1	84.8	1.52	13.3	94	106.5	104.7	105.2
12	†Funk Hybrid G94	86.2	84.7	1.88	13.1	93	105.3	104.6	104.8
13*	†Crow Hybrid 804	85.0	84.9	.07	11.7	92	104.2	104.8	104.7
14*	†Crow Hybrid 701W	85.3	85.1	.24	14.2	90	101.9	105.1	104.3
15	†St. Charles White	84.9	84.7	.20	14.8	89	100.8	104.6	103.7
16*	†DeKalb Hybrid 917 (W)	86.1	83.5	3.07	16.4	88	99.7	103.1	102.3
17	DeKalb Hybrid 821B	85.6	83.4	2.61	11.9	87	98.6	103.0	101.9
17*	†Illini Hybrid 233	83.8	83.4	.45	11.7	87	98.6	103.0	101.9
19	†Funk Hybrid G90	86.4	83.2	3.65	13.0	87	98.6	102.7	101.7
20*	†Funk Hybrid G95	84.7	83.9	.94	12.7	84	95.2	103.6	101.5
21	†Wilson Yellow Dent	84.6	83.4	1.46	13.1	84	95.2	103.0	101.1
22	†DeKalb Hybrid 817	82.3	81.2	1.38	12.1	89	100.8	100.3	100.4
23	†Pfister-Stiegelmeier Hybrid 375R	81.3	80.2	1.32	13.5	91	103.1	99.0	100.0
24*	†Pioneer Hi-Bred 305A	83.2	80.3	3.45	14.5	89	100.8	99.2	99.6
24	†DeKalb Hybrid 823	79.9	79.7	.25	11.3	91	103.1	98.4	99.6
26	†DeKalb Hybrid 628	81.3	79.9	1.72	11.4	87	98.6	98.7	98.7
26	DeKalb Hybrid 828	80.7	79.7	1.25	12.4	88	99.7	98.4	98.7
28	†DeKalb Hybrid 831	79.5	79.4	.15	13.4	87	98.6	98.1	98.2
●	**Average of 5 open-pollinated varieties**	**81.0**	**80.5**	**.55**	**14.5**	**83**	**94.0**	**99.5**	**98.1**
29*	†Iowealth Hybrid 30	78.6	78.4	.21	13.6	90	101.9	96.8	98.1
30	†Funk Hybrid G56	79.0	78.9	.18	12.7	88	99.7	97.4	98.0
31	†Iowealth Hybrid 53	77.6	77.5	.13	10.7	92	104.2	95.7	97.8
32	†Illinois Hybrid 960 (Holmes)	79.1	78.9	.24	11.4	87	98.6	97.4	97.7
33	†Illini Hybrid 411	77.9	77.9	0	11.4	89	100.8	96.2	97.4
33	†DeKalb Hybrid 830	77.2	77.0	.26	12.6	92	104.2	95.1	97.4
35	*Funk Hybrid G50	80.1	77.8	2.86	12.7	89	100.8	96.1	97.3
36	†Leaming (Neville)	80.0	79.5	.64	16.8	83	94.0	98.2	97.2
36*	†DeKalb Hybrid 832	79.7	77.1	3.25	15.0	91	103.1	95.2	97.2
36*	†National Hybrid 132	77.7	76.8	1.16	11.7	92	104.2	94.8	97.2
39	DeKalb Hybrid 827	78.9	76.5	3.10	11.9	87	98.6	94.5	95.5
40	†DeKalb Hybrid 870	78.5	76.2	2.87	11.7	86	97.4	94.1	94.9
41	†Waddell Utility White Dent	78.5	78.4	.17	14.5	78	88.4	96.8	94.7
42	†National Hybrid 131	75.0	74.5	.70	11.2	91	103.1	92.0	94.1
43	†Beckerle Yellow Dent	76.9	76.7	.26	13.1	81	91.8	94.7	94.0
44*	†Pioneer Hi-Bred 312	74.8	74.4	.50	12.6	88	99.7	91.9	93.9
45	†Pioneer Hi-Bred 317	74.0	73.1	1.15	11.0	89	100.8	90.3	92.9
46	†Iowealth Hybrid 50	73.4	73.4	.05	11.7	87	98.6	90.6	92.6
47	†National Hybrid 130	73.7	72.9	.12	11.3	87	98.6	90.0	92.2
48*	†Funk Hybrid G92	75.8	73.1	3.55	12.1	85	96.3	90.3	91.8
49	†DeKalb Hybrid 871	71.2	71.1	.16	11.2	88	99.7	87.8	90.8
50	†Funk Hybrid G244	70.3	69.9	.55	11.8	86	97.4	86.3	89.1
	Average of all entries	81.9	81.0	1.05	12.9	88.3	....	....	....
	Average yield of entries grown in 1937 and 1938								
1	Funk Hybrid G86	89.2	89.1	.05	15.2	87.5	114.8	108.0	109.7
2	Funk Hybrid G95	87.8	86.9	.52	15.9	79.5	104.3	105.3	105.1
3	Illinois Hybrid 960	87.4	86.9	.58	14.7	79.3	104.1	105.3	105.0
4	Funk Hybrid G90	85.9	84.3	1.84	16.7	85.5	112.2	102.2	104.7
5	DeKalb Hybrid 870	86.3	85.0	1.66	14.1	79.0	103.7	103.0	103.2
6	St. Charles White	87.0	86.1	.99	17.9	71.8	94.2	104.4	101.9
7	DeKalb Hybrid 871	81.1	80.5	.70	13.6	81.0	106.3	97.6	99.8
8	Wilson Yellow Dent	83.0	82.1	1.03	15.5	71.0	93.2	99.5	97.9
9	Funk Hybrid G244	79.6	79.1	.61	14.9	77.8	102.1	95.9	97.5
10	Funk Hybrid G92	80.8	78.5	2.91	15.6	79.3	104.1	95.2	97.4
●	**Average of 5 open-pollinated varieties**	**82.0**	**81.2**	**.89**	**17.9**	**67.6**	**88.7**	**98.4**	**96.0**
11	Leaming	83.6	82.2	1.59	20.5	61.3	80.4	99.6	94.8
12	Beckerle Yellow Dent	72.1	71.7	.61	15.2	70.8	92.9	86.9	88.4
	Average of all entries	83.6	82.5	1.07	15.9	76.2	....	....	....

*Less than 5 bushels of seed sampled. †Average of 9 plots instead of 10.

Less than 3.7 bushels difference between total yields of any two entries in this table is not considered significant.

Table 14.—EXTREME SOUTHERN ILLINOIS: Elizabethtown

Rank	Entry	Acre-yield		Damaged corn in shelled sample	Moisture in grain at harvest	Erect plants	Rating for—		
		Total	Sound				Erect plants	Sound yield	General perform.
	1938	*bu.*	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Funk Hybrid G56	67.6	66.8	1.24	12.6	82.5	98.6	123.4	117.2
2	*DeKalb Hybrid 915 (W)	64.5	62.0	3.80	13.5	90	107.6	114.5	112.8
3	*DeKalb Hybrid 922 (W)	64.7	60.2	7.02	14.2	88.5	105.8	111.2	109.9
4	Iowealth Hybrid 53	61.8	60.9	1.52	10.7	83	99.2	112.5	109.2
5	*Pioneer Hi-Bred 305A	60.8	58.9	3.20	14.5	85.5	102.2	108.8	107.2
6	Funk Hybrid G94	58.5	57.6	1.50	12.5	88.5	105.8	106.4	106.3
7	Illinois Hybrid 960 (Holmes)	61.7	58.7	4.86	11.9	83	99.2	108.4	106.1
8	Pioneer Hi-Bred 313	59.9	58.0	3.24	12.7	86	102.8	107.1	106.0
9	Funk Hybrid G49	60.9	57.8	5.03	12.7	85	101.6	106.7	105.4
10	*DeKalb Hybrid 720 (W)	58.5	57.1	2.39	13.4	87	104.0	105.5	105.1
11	*Funk Hybrid G86	58.8	56.3	4.22	12.9	86	102.8	104.0	103.7
12	DeKalb Hybrid 830	57.1	55.7	2.50	13.0	87	104.0	102.9	103.2
13	Funk Hybrid G62	59.1	57.4	2.82	13.6	79	94.4	106.0	103.1
14	DeKalb Hybrid 870	57.7	57.2	.87	12.7	76.5	91.4	105.6	102.1
15	*Funk Hybrid G50	58.2	56.4	3.07	13.1	79.5	95.0	104.2	101.9
16	*DeKalb Hybrid 909 (W)	55.6	54.3	2.26	13.8	87.5	104.6	100.3	101.4
17	Illinois Hybrid 960 (Morgan)	58.0	55.5	4.28	12.3	80	95.6	102.5	100.8
17	*DeKalb Hybrid 919 (W)	55.2	54.2	1.80	13.0	86	102.8	100.1	100.8
17	DeKalb Hybrid 828	54.8	54.2	1.02	13.5	86	102.8	100.1	100.8
20	St. Charles White (Isenberg)	56.9	53.8	5.47	12.3	87.5	104.6	99.4	100.7
21	*Iowealth Hybrid 30	56.8	54.0	4.97	11.7	86.5	103.4	99.7	100.6
22	Funk Hybrid G244	55.5	54.5	1.83	13.1	82.5	98.6	100.7	100.2
23	Pfister-Stiegelmeier Hybrid 375R	56.9	54.6	4.00	12.3	82	98.0	100.8	100.1
24	Funk Hybrid G125	53.0	52.4	1.06	12.4	90	107.6	96.8	99.5
25	Funk Hybrid G90	55.5	54.0	2.62	14.8	82.5	98.6	99.7	99.4
26	*Illinois Hybrid 863 (Illini)	56.2	54.3	3.41	13.1	79.5	95.0	100.3	99.0
27	Funk Hybrid G46	54.5	53.3	2.21	13.9	84	100.4	98.4	98.9
28	DeKalb Hybrid 821B	54.4	53.1	2.40	12.7	83	99.2	98.1	98.4
29	Blackhawk (Kruetzberg)	52.6	52.5	.10	14.5	85	101.6	97.0	98.2
30	Leaming (Neville)	53.8	51.7	3.84	17.8	84	100.4	95.5	96.7
31	DeKalb Hybrid 831	50.2	49.7	.94	13.6	88	105.2	91.8	95.2
	● Average of 5 open-pollinated varieties	**51.8**	**50.0**	**3.30**	**14.0**	**85.2**	**101.8**	**92.3**	**94.7**
32	DeKalb Hybrid 628	52.4	51.8	1.14	11.3	76.5	91.4	95.7	94.6
32	*DeKalb Hybrid 832	50.2	49.3	1.80	12.5	88	105.2	91.1	94.6
34	DeKalb Hybrid 817	51.9	50.7	2.25	11.0	80	95.6	93.6	94.1
35	DeKalb Hybrid 871	52.0	51.4	1.08	13.1	76.5	91.4	94.9	94.0
36	Morgan Hybrid 52	50.8	50.5	.61	10.7	80	95.6	93.3	93.9
37	Local Variety	52.0	48.8	6.08	12.6	84.5	101.0	90.1	92.8
38	*Pioneer Hi-Bred 312	50.9	50.0	1.78	11.7	77.5	92.6	92.3	92.4
39	DeKalb Hybrid 823	47.3	46.7	1.18	10.7	86.5	103.4	86.2	90.5
40	*Funk Hybrid G92	47.9	47.5	.82	13.5	80	95.6	87.7	89.7
41	Iowealth Hybrid 50	48.1	47.3	1.69	11.7	79	94.4	87.4	89.2
42	Beckerle Yellow Dent	43.5	43.1	.99	13.0	85	101.6	79.6	85.1
	Average of all entries	55.6	54.2	2.59	12.9	83.7	....	....	....
	Average yield of entries grown in 1937 and 1938								
		bu.	*bu.*	*perct.*	*perct.*	*perct.*	*perct.*	*perct.*	
1	Funk Hybrid G56	69.6	68.6	1.44	13.6	70.3	95.6	112.8	108.5
2	Illinois Hybrid 960	69.0	67.2	2.84	12.9	69.5	94.6	110.5	106.5
3	Funk Hybrid G49	68.0	65.7	3.51	13.5	71.5	97.3	108.1	105.4
4	Funk Hybrid G46	59.8	58.7	1.85	14.1	84.5	115.0	96.5	101.1
5	Illinois Hybrid 863	63.0	61.9	1.92	13.6	70.8	96.3	101.8	100.4
6	Funk Hybrid G62	64.2	63.0	1.99	13.9	61.5	83.7	103.6	98.6
7	Leaming	57.3	56.1	2.23	17.5	79.0	107.5	92.3	96.1
8	St. Charles White	56.2	54.5	3.02	14.5	84.3	114.7	89.6	95.9
9	Funk Hybrid G244	58.7	58.0	1.18	13.6	71.3	97.0	95.4	95.8
10	Funk Hybrid G92	55.1	54.5	1.06	13.6	72.5	98.6	89.6	91.9
	Average of all entries	62.1	60.8	2.10	14.1	73.5	....	....	....

*Less than 5 bushels of seed sampled.

Less than 12.4 bushels difference between total yields of any two entries in this table is not considered significant.

RESULTS IN SOIL ADAPTATION TESTS

The study of the behavior of corn hybrids in relation to soil fertility undertaken in 1935 was continued in 1938 at Sibley and Urbana, both places offering particularly good opportunity to grow the hybrids on plots of soil varying in fertility.

Soils. In the Sibley test the less fertile area is a poor grade of Elliott silt loam soil, somewhat eroded, and very gray. The highly productive area is the soil type known as Drummer clay loam.

At Urbana, the two areas selected for test differed in productive capacity as a result of the long-continued use of different cropping systems. The more productive area, known as the Southwest rotation,

Table 15.—SOIL ADAPTATION TEST: Central Illinois, Sibley

Rank	Entry	Total acre yield	Moisture in grain at harvest	Percent erect plants	Rating for— Erect plants	General perform.	Total yield
	DRUMMER CLAY LOAM: Productivity high (Farm 41)						
1	Funk Hybrid G94	78.2	19.2	92	107.4	113.7	115.8
2	U. S. Hybrid 13 (Ohio)	76.5	20.8	92	107.4	111.8	113.3
3	Funk Hybrid G212	71.9	19.5	90	105.0	106.1	106.5
3	U. S. Hybrid 44 (Moews)	71.9	19.4	84	98.0	104.4	106.5
3	Sibley Estate Hybrid 588	71.9	21.1	75	87.5	101.8	106.5
6	(R4x4-8) (701x317)	70.7	18.8	80	93.4	101.9	104.7
7	(R4x38-11) (701x317)	70.6	19.6	88	102.7	104.1	104.6
8	Illinois Hybrid 960 (Shissler)	70.0	19.2	88	102.7	103.4	103.7
9	Crow Hybrid 360A	67.7	20.2	90	105.0	101.5	100.3
10	DeKalb Hybrid D817	66.6	20.2	87	101.5	99.3	98.6
11	U. S. Hybrid 5 (Mountjoy)	65.8	20.8	90	105.0	99.3	97.4
12	Funk Hybrid G49	65.4	21.4	87	101.5	98.0	96.9
13	Illinois Hybrid 1061	65.0	19.9	78	91.0	95.0	96.3
14	(R4xPr) (701x317)	64.6	19.4	82	95.7	95.7	95.7
15	Illinois Hybrid 546 (Morgan)	64.2	20.2	90	105.0	97.6	95.1
16	Sibley Estate Hybrid 753	64.1	20.8	88	102.7	96.9	94.9
17	(WF9x38-11) (R4xPr)	63.9	19.8	97	113.2	99.2	94.6
18	U. S. Hybrid 35 (Holmes)	62.7	20.8	90	105.0	95.9	92.9
19	Illinois Hybrid 543 (Shissler)	60.1	20.8	87	101.5	92.1	89.0
20	Station Yellow Dent	**57.2**	**20.4**	**58**	**67.7**	**80.4**	**84.7**
	Average	67.5	20.1	85.7	....	....	....
	ELLIOTT SILT LOAM: Productivity low (Farm 92)						
1	Funk Hybrid G212	59.7	16.9	87	99.1	108.9	112.2
2	Crow Hybrid 360A	58.9	16.1	81	92.2	106.1	110.7
3	U. S. Hybrid 13 (Ohio)	58.6	19.2	95	108.2	109.7	110.2
3	(R4x4-8) (701x317)	58.6	16.2	89	101.4	108.0	110.2
5	U. S. Hybrid 44 (Moews)	57.5	17.1	92	104.8	107.3	108.1
6	(R4x38-11) (701x317)	56.6	15.3	93	105.9	106.3	106.4
7	Funk Hybrid G94	55.9	22.0	91	103.6	104.7	105.1
8	Illinois Hybrid 1061	55.8	16.3	89	101.4	104.0	104.9
9	Illinois Hybrid 546 (Morgan)	54.2	17.9	83	94.5	100.0	101.9
10	Sibley Estate Hybrid 653	52.6	20.6	80	92.2	97.2	98.9
11	Illinois Hybrid 960 (Shissler)	52.5	19.4	92	104.8	100.2	98.7
12	Illinois Hybrid 543 (Shissler)	52.2	19.8	85	96.8	97.8	98.1
13	Funk Hybrid G49	51.1	16.4	92	104.8	98.3	96.1
14	(R4xPr) (701x317)	50.2	19.8	87	99.1	95.6	94.4
15	U. S. Hybrid 35 (Holmes)	50.0	17.9	97	110.5	98.1	94.0
16	DeKalb Hybrid 817	49.0	19.1	88	100.2	94.1	92.1
17	(WF9x38-11) (R4xPr)	48.8	16.9	87	99.1	93.6	91.7
18	U. S. Hybrid 5 (Mountjoy)	48.4	19.4	92	104.8	94.4	91.0
19	Sibley Estate Hybrid 588	47.7	21.7	92	104.8	93.5	89.7
20	Station Yellow Dent	**46.0**	**19.0**	**64**	**72.9**	**83.1**	**86.5**
	Average	53.2	18.3	87.8	....	....	....

Two hybrids on the same highly fertile soil

Illinois Hybrid 960 (*left*) and U. S. Hybrid 13 (*right*) after strong winds at Urbana just previous to harvest. Many strains besides Illinois 960 were severely damaged also.

Ears from the same hybrids as above, grown on soil of low fertility

Illinois Hybrid 960 (*left*) and U. S. Hybrid 13 (*right*) on soil of low fertility, at Sibley, 1938. Here Illinois 960 was far ahead of U. S. 13 in ear and kernel characters.

Table 15A.—THREE- AND FOUR-YEAR SUMMARIES: Soil Adaptation Test, Sibley

Entry	Soil of *high* productivity		Soil of *low* productivity	
	Acre yield	Increase over open-pollinated	Acre yield	Increase over open-pollinated
Four-year average				
	bu.	*bu.*	*bu.*	*bu.*
Ill. 588	83	14	47	5
Ill. 546	76	7	46	4
Ill. 543	76	7	46	4
Station Yellow Dent	69	...	42	...
Three-year average				
U. S. 44	85	18	48	8
Ill. 960	84	17	47	7
U. S. 5	81	14	41	1
Ill. 588	79	12	46	6
Ill. 543	75	8	44	4
Ill. 546	75	8	45	5
Station Yellow Dent	67	...	40	...

is under a cropping system of corn, oats, clover, and wheat, with a clover catch crop in the wheat. On the less productive area, known as the South-Central rotation, the cropping system is corn, corn, corn, and soybeans. Slightly more limestone has been applied to the Southwest rotation; otherwise the supplementary treatments of manure and phosphate on these two areas have been very similar.

Season. Uniformly favorable seasonal conditions prevailed, for the most part, in these areas in 1938. At Sibley, however, Farm 41, the highly productive area, was subjected in late summer to a devastating windstorm which caused severe lodging of some entries. At Urbana a strong wind just previous to harvest caused severe lodging on the Southwest rotation but did not affect the South-Central rotation to any great extent.

1938 Results. Again the hybrids demonstrated that their superiority in yield over open-pollinated corn is greater on highly fertile soil than on relatively poor soil.

At Sibley the five best hybrids outyielded the open-pollinated variety by 17.9 bushels an acre on the better soil, while on the poorer soil the difference was only 12.7 bushels. At Urbana the difference between the hybrids and the open-pollinated variety on the more fertile soil was not so great as at Sibley, nor so great as in other years at Urbana. The five best hybrids at Urbana averaged only 12.2 bushels an acre more at the high fertility level than the open-pollinated variety. On the medium-fertility level, however, the five best hybrids were 17 bushels better than the open-pollinated variety. All conditions on the high-productivity level at Urbana were ideal for corn production thruout the season, and the open-pollinated variety made the very high yield of 106.4 bushels an acre.

Table 16.—SOIL ADAPTATION TEST: Central Illinois, Urbana

Rank	Entry	Total acre yield	Moisture in grain at harvest	Percent erect plants	Rating for— Erect plants	General perform.	Total yield
MUSCATINE SILT and CLYDE CLAY LOAM: Productivity high (Southwest rotation)							
1	U. S. Hybrid 5 (Mountjoy)	119.6	13.8	95	121.3	108.9	104.8
2	U. S. Hybrid 13 (Ohio)	119.5	14.1	95	121.3	108.8	104.7
3	U. S. Hybrid 44 (Moews)	118.8	13.7	70	89.4	100.4	104.1
4	(R4x38-11) (701x317)	117.8	13.2	80	102.2	103.0	103.2
5	(WF9x38-11) (R4xPr)	117.3	13.2	95	121.3	107.4	102.8
6	Crow Hybrid 360A	117.0	13.4	80	102.2	102.4	102.5
7	Funk Hybrid G212	116.2	13.8	70	89.4	98.7	101.8
8	Funk Hybrid G94	115.6	14.0	95	121.3	106.3	101.3
9	DeKalb Hybrid D817	115.5	13.4	95	121.3	106.2	101.2
10	U. S. Hybrid 35 (Holmes)	114.1	13.6	95	121.3	105.3	100.0
11	Funk Hybrid G49	114.0	13.7	85	108.5	102.0	99.9
12	Illinois Hybrid 1061	112.9	12.9	70	89.4	96.5	98.9
13	Sibley Estate Hybrid 753	112.6	13.9	50	63.9	90.0	98.7
14	(R4xPr) (701x317)	111.2	13.2	75	95.8	97.0	97.4
15	Sibley Estate Hybrid 588	110.8	14.0	70	89.4	95.2	97.1
16	Illinois Hybrid 960 (Shissler)	108.6	13.2	50	63.9	87.4	95.2
17	Station Yellow Dent	**106.4**	**13.5**	**75**	**95.8**	**93.9**	**93.3**
18	(R4x4-8) (701x317)	106.3	13.4	65	83.0	90.7	93.2
	Average	114.1	13.6	78.3	....	....	....
MUSCATINE SILT LOAM: Productivity medium (South-Central rotation)							
1	U. S. Hybrid 13	67.6	12.9				110.4
2	U. S. Hybrid 44 (Moews)	66.7	13.2				109.0
3	Sibley Estate Hybrid 588	66.4	13.4				108.5
4	(R4x4-8) (701x317)	66.2	12.4				108.2
5	Funk Hybrid G94	64.1	13.4				104.7
6	Illinois Hybrid 960 (Shissler)	63.4	12.7	ALL PLANTS ERECT	ALL PLANTS ERECT	ALL PLANTS ERECT	103.6
7	Sibley Estate Hybrid 753	62.8	13.1				102.6
8	Funk Hybrid G212	62.6	12.6				102.3
9	Crow Hybrid 360A	62.3	13.0				101.8
10	U. S. Hybrid 5 (Mountjoy)	61.3	13.2				100.2
11	U. S. Hybrid 35 (Holmes)	60.7	12.9				99.2
12	Illinois Hybrid 1061	60.0	13.2				98.0
13	(R4x38-11) (701x317)	59.9	12.5				97.9
14	DeKalb Hybrid D817	59.5	12.6				97.2
15	(R4xPr) (701x317)	59.1	12.7				96.6
16	(WF9x38-11) (R4xPr)	56.0	12.8				91.5
17	Funk Hybrid G49	53.5	12.6				87.4
18	Station Yellow Dent	**49.2**	**13.6**				**80.4**
	Average	61.2	12.9				....

Note.—Ranking is made on basis of total yield because of wide differences in lodging on different productive levels.

Averages. For the four years during which the soil-adaptation tests have been conducted, the average yield of all the hybrids included has been higher than the average yield of the open-pollinated variety at both Sibley and Urbana on each of the fertility levels tested. The difference between the averages has been greater on the more fertile soils than on the poorer soils.

At Sibley the hybrids outyielded the open-pollinated variety by 2.5 bushels an acre on the low-fertility level and by 8.1 bushels an acre on the high-fertility level. At Urbana these differences were 9.2 bushels on the medium-fertility level and 10.9 bushels on the high-fertility level. These averages include *all* the hybrids grown during the four years, whether they were grown one year or four.

Likewise when the averages include only those hybrids which have been in the tests the full four years (or three years, in the case of

the three-year summaries) the hybrids have shown a greater superiority over the open-pollinated variety on the fertile soils than on the poorer soils (Table 15A, page 268). The three hybrids grown at Sibley for four years outyielded the open-pollinated variety by 4.2 bushels an acre on the low-fertility level, and by 9.3 bushels on the high-fertility level. Those grown three years outyielded the open-pollinated variety by 5.1 bushels on the low-fertility level and by 12.8 bushels on the high-fertility level.

Adaptation Involves More Than Total Yields. Total yield alone does not always give a true picture of adaptability. For example, such hybrids as U. S. 5, U. S. 13, and Illinois 546 often show very undesirable ear and kernel development on the less fertile soils even tho they may yield well on such soils. Likewise, hybrids Illinois 960, U. S. 44, Illinois 588, and Illinois 543 show good types of ears and good kernel development on the thin soils, but when they are grown on more fertile soil lodging is often bad enough to make them very undesirable.

Some of the characteristics on which adaptability is based are illustrated by the photographs on page 267.

SUMMARY

1. The five best hybrids on all the ten fields in the 1938 Illinois corn-performance tests yielded an average of 15.5 bushels an acre above the five open-pollinated varieties. They also exceeded the open-pollinated varieties in percentage of erect plants by 13.2 points.

2. On nine of the ten test fields the five best hybrids exceeded the five open-pollinated varieties in yield of sound corn an acre, and on all ten fields they surpassed the open-pollinated varieties in percentage of erect plants.

3. In the northern, north-central, and central sections of the state, even the five poorest hybrids averaged above the five open-pollinated varieties in yield of sound corn.

4. In the northeastern, south-central, southern, southeastern, and extreme southern sections of the state the five poorest hybrids fell below the five open-pollinated varieties in yield of sound corn.

5. Two- and three-year summaries of results in the northeastern, northern, north-central, and central sections show that certain hybrids were definitely superior to the adapted open-pollinated varieties.

6. In the two-year summary of the south-central section, certain hybrids were distinctly superior to the open-pollinated varieties, but this was not true for the three-year summary, which included only two hybrid entries.

7. Two-year summaries of the southeastern field at Albion and the extreme southern field at Elizabethtown show a small advantage for the hybrids over the open-pollinated varieties, while at Shobonier, in Fayette county, there was no advantage at all for the hybrids.

8. The average percentage of dropped ears on the east north-central field at Reddick was .92, and on the west-central field at Littleton it was .55. A few hybrids dropped as many as 3.3 percent of their ears. Fifteen hybrids in the Reddick field and 10 hybrids in the Littleton field dropped 1 percent or more of their ears.

9. Corn rootworms were the only insects causing damage worthy of note on the 1938 fields. Many hybrids were above the average in resistance to two species of corn rootworm, as indicated by data on lodging caused by these insects.

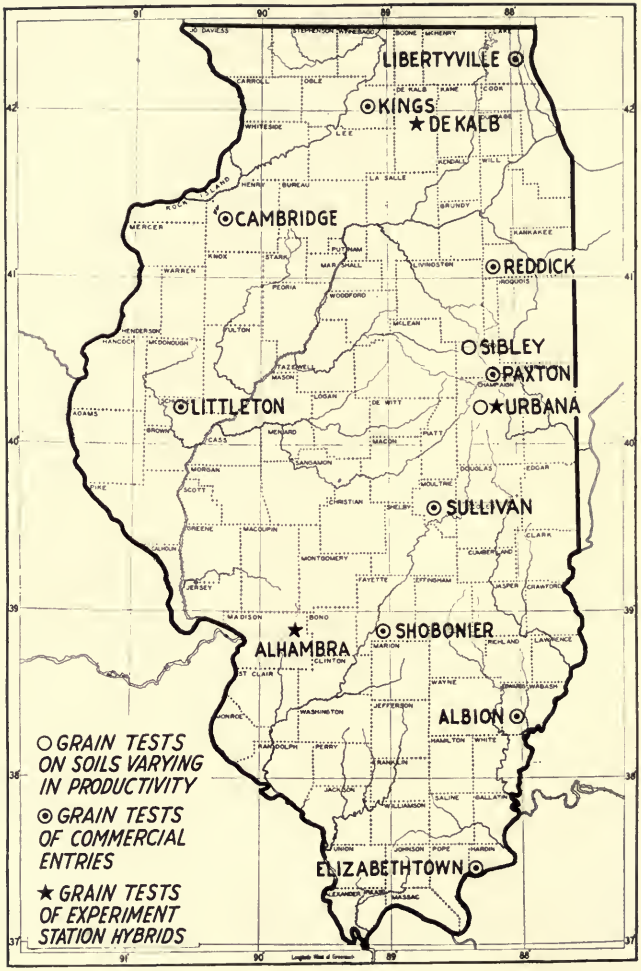
10. A combination of Stewart's disease and Diplodia stalk rot reduced yields as much as 50 percent in some localities in 1938, the most severe damage occurring in the south-central part of the state. On the test fields studied—Reddick, Paxton, Sullivan, and Albion—damage was most severe at Sullivan in south-central Illinois and at Albion in the southeastern section. At these locations disease severity was correlated with low yield.

11. The high-yielding hybrids appeared to be more susceptible to the above disease complex than the lower-yielding hybrids, tho there were exceptions.

12. Disease susceptibility appeared to be correlated most highly with earliness of maturity. The best recommendation for avoiding losses from the above disease complex is, therefore, to use hybrids or varieties that require the entire growing season for their full development.

13. The 1938 soil-adaptation tests, like those in the past, demonstrate the necessity of having fertile soil in order to take full advantage of the high-yielding capacity of good hybrids. Yield alone, however, is not always a complete index to the adaptability of a variety or hybrid to a given soil, for lodging, type of ear, and kernel formation may also be greatly influenced by productivity level.

LOCATION OF 1938 TEST FIELDS



Ten fields, distributed so as to represent the more important climatic areas of the state, were used in the 1938 tests. In 1937 seventeen fields were used, but as the rankings on different fields within each section, except in the southern section, were about the same, it was decided that fewer fields could be used. The grain tests of the Station hybrids at Urbana are not included in this report.

Further information about these fields is given on pages 228 and 229.

3,000—1-39—15731
23,050—1-39—15731